

# TOPICS

A z/OS Newsletter, Issue 6

February, 2002



PAUL LOFTUS

## A word from Paul Loftus

*zSeries . . .*

*a key to tomorrow's e-business*

We're in the early stages of a massive e-business transformation driven by exciting technologies -- copper conductivity; microdrives holding thousands of photos or hundreds of novels; flat panel displays with resolution exceeding that of the human eye. The industry must run hard simply to keep up with the effects of these powerful technologies.

All this innovation is going to produce a robust, diverse e-business infrastructure -- one that supports an incredible variety of applications which, in turn, support customers, business partners, employees, and in short, everyone needed for a successful enterprise.

Excellent price/performance characteristics are driving the deployment of huge volumes of technology and bringing us new capabilities, applications, speed and function. But this also presents some challenges. While taking advantage of the latest technology, we must keep cost under control. As IT professionals, we all face increasing cost pressure and we must manage our infrastructures more carefully than ever.

New dimensions in complexity are added as we deal with new kinds of workloads and applications; now it is transactions, data, worldwide networks, entertainment, 24/7 operation, advertising, business process management and a host of other workloads that are only going to grow over time.

This greater complexity will serve to heighten an already critical skills shortage and a tremendous increase in demand for IT personnel.

With this wonderful technology growth engine, we're challenged more than ever. Building and managing an integrated e-business infrastructure is not easy! As workloads increase in variety, transaction volume and level of required application integration increase pressure on an already constrained skilled resource base.

With zSeries we are committed to delivering the best technologies and the best features and functions to the market in ways that are relevant and make sense to the customer and end-user. ▶

*"With zSeries we are committed to delivering the best technologies and the best features and functions to the market in ways that are relevant and make sense to the customer and end-user."*

-- Paul Loftus,  
Vice-President,  
Systems Software,  
IBM Server Group

(continued on page 25)

# HOT TOPICS

A z/OS Newsletter  
Issue 6 February, 2002



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The z/OS Hot Topics Newsletter is published twice yearly as a service to customers, providing articles of interest to the z/OS and OS/390 community.

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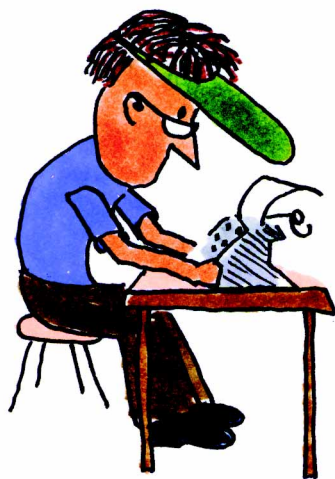
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# A letter from the editors

## In this issue...



KERRY COLLIA

Welcome to Issue 6 of the Hot Topics Newsletter! Our "hot" topic this time around is ease-of-use. The selection of articles we have for you sheds light on what we've accomplished over the last several years and what is planned for the future to make our systems easier to manage and use. The first series of articles address this topic in the context of eLiza™, IBM's overall system-based ease-of-use initiative. The remaining articles all address ease-of-use from information standpoints, covering topics such as LookAt, softcopy collections, and customer feedback.

Of special note is the last article (see the back page) on security, though it's mostly a preview of a topic that we will address in much greater detail in a future edition.

You have, no doubt, noticed Paul Loftus' note on the cover. The column, "A word from Paul Loftus," will become a regular fixture in the Newsletter from now on.

Don't miss Greg Daynes' migration Q's and A's article (page 36). Greg has answered many of these questions at SHARE, and we thought it was time to present them in a more permanent and widely-available form for you to peruse and learn from in your leisure.

We've included a refreshed copy of the "zFavorites" CD in this issue. You've told us that zFavorites makes it much easier for you to find information, so we'll now include the latest version in every Newsletter. And, for those of you who just can't get enough, zFavorites is now its own separately-orderable item (makes a great party favor)!

What else? Oh yes -- be sure to read the articles by Adrian Becker (page 56), Shirley Swenson (page 60), and Don Spangler (page 10). They describe the results of recent customer surveys. You may have taken a survey or three, so you'll find it interesting to see what information we've gathered and what we're doing about it. Be sure to check out the results.

And, as always, please take a moment to fill out the provided reader comment card and drop it in the mail. Let us know how we're doing and what topics you are interested in reading more about. Thank you! ■

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- The Editors

# The road to eLiza

BY JIM PORELL

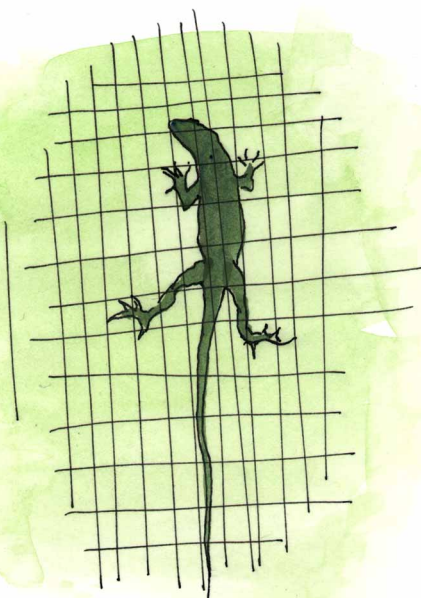
Over the years, studies have shown that the mainframe architecture of IBM®, now known as the zSeries architecture and z/OS operating system, has the best Total Cost of Ownership for workloads with high transaction rates while running multiple workloads simultaneously. This is possible due to the number of tuning parameters available across the diverse componentry that makes up the z/OS operating system. As other operating systems evolve to meet the same cost characteristics of z/OS, IBM continues to find new ways to improve. The introduction of the @server™ brand in October, 2000, brought a renewed focus to commonality and simplicity across the IBM server brands. The @server eLiza initiative, announced early in 2001, is bringing the best of IBM server technologies together and adding a few new capabilities to further lower the deployment costs of its servers.

In addition, Project eLiza is an IBM server-wide initiative aimed at providing technology and products that will reduce the complexity of managing the multi-tiered, multi-platform IT infrastructure. It aims to automate and expand the scope of many of the operational tasks performed by customers and system operators today. Ultimately, with Project eLiza, the IT infra-

structure becomes self-managing: self-healing, self-optimizing, self-protecting, self-configuring.

Also, as part of eLiza, individual software products and e-servers are being designed and delivered to provide self-managing features and functions. They will allow you to easily customize your system, optimize its performance, correct or avoid system defects and protect your workloads from intrusive security attacks.

But why bother to change? If z/OS has such a great reputation for Total Cost of Ownership, does it need to make any improvements? Of course it does. The “z” in zSeries and z/OS comes from our customers' desires to have zero down time and continuous availability. Each day, new customers are looking to solve additional business problems and more of them must be available around the clock. High availability goals and rapid application deployment are both strongly related to the ease of use of an operating system. To maintain high availability objectives, the operation of the system must be simple enough to avoid human errors due to complexity. To enable the growth of applications on a system, the applications must be easy to install and seamlessly integrate with other applications that may be executing on the system. Customers, like many of you reading this article, have told us through conversations, surveys and user feedback sessions that your top three ease-of-use concerns are: elimination of complex user tasks, automation of manual, labor-intensive procedures, and easy access to tools that support just-in-time task work. A tall order for anyone, but through



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the eLiza initiative, IBM is working hard to address these sorts of systems management concerns.

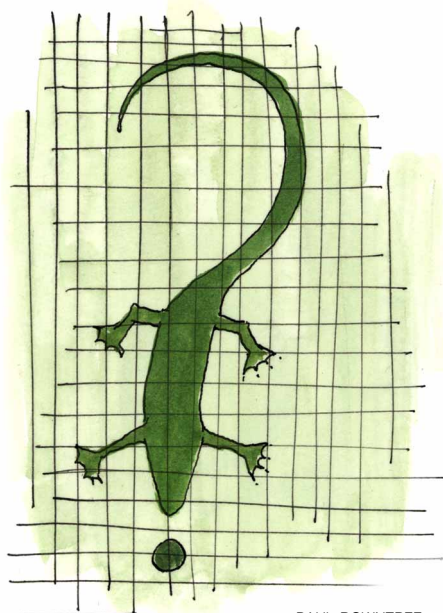
Many of the technologies that will become part of the Project eLiza end-to-end self-managing functions, as well as features and properties of eLiza that are being adopted by the other IBM e-servers began as fundamental properties of z/OS and the zSeries architecture. Examples are workload management and automated operations. But at the same time, the zSeries team realizes that we have just started down the Road to eLiza, whose ultimate goal is a fully-automated self-customizing, self-optimizing, self-healing and self-protecting IT infrastructure system offering. In fact, recognizing that most e-business oriented workloads today are implemented across multiple operating system architectures, the goal of eLiza is to address those properties across platforms and simplify the solutions used to solve customers' business problems. Many of our recent improvements not only strive to make our product easier to use, but serve as the foundation toward the realization of these

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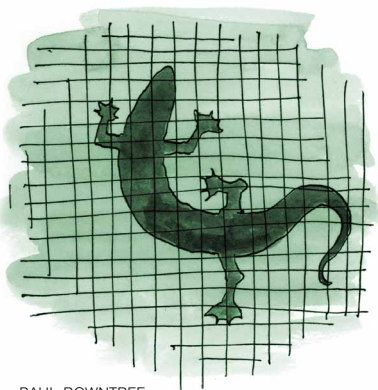
# What is eLiza?

BY JOSEPH WINKELBAUER



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Today's e-business infrastructure is characterized by a variety of architectures, platforms, and technologies. Within five years, it is expected that hundreds of millions of people will be connected using wireless and other devices, driving trillions of transactions and tremendous amounts of rich media, like voice and video, and accessing petabytes of storage and data. That supporting infrastructure will be even more diverse, and include appliances, far-flung branch servers, mainframes, and systems hosted by



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service providers. Compounding this problem, the skills to manage the environment will be at a premium, assuming no improvements in technology.

Project eLiza was announced by IBM in April of 2001 to address this challenge by delivering self-managing systems. It will focus IBM research and development, on accelerating the delivery of self-managing systems, giving customers the ability to manage environments hundreds of times more complex and more broadly distributed than exist today.

Project eLiza defines the leadership foundation for self-managing systems that already exists in IBM's @server. That foundation comprises four self-managing technology attributes (self-configuring, self-healing, self-optimizing and self-protecting). Ongoing IBM announcements have supported extensions and enhancements of functions to make @server more self-managing. Through the Advanced e-business Council (a team effort between IBM and customers) and similar structures, Project eLiza unites IBM with customers in a common effort to design the future of self-managing e-business environments. To date, major requirements for the solution of self-managing e-business problems have been identified including the ability to manage and prioritize work across a heterogeneous environment and the ability to support disaster recovery across multiple operating environments.

Self-managing systems is one of the grandest challenges in computer science. Technology needs increasingly to be devoted to managing technology. IBM and the rest of the industry need to build into the infrastructure, the capability to automatically detect denial of service attacks, security breaches, surges of demand and the myriad failures possible in a complex, open environment and handle them all, so the system never stops working. In short, we and the industry must move toward an autonomic infrastructure.

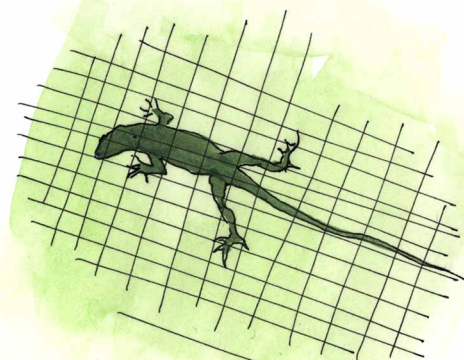
For further information on Project eLiza, please visit the Web site at: <http://www.ibm.com/servers/eserver/introducing/eliza>. ■

# eLiza and z/OS

BY JOACHIM SCHMALZRIED

## Introducing eLiza

At the @server Analyst Symposium in April 2001, Project eLiza was formally announced as a major initiative to deliver systems that manage themselves. Building upon today's @server self-managing leadership, which is the foundation for eLiza, the objective is to give customers the power to manage environments that are hundreds of times more complex and more broadly distributed than exist today. The project, while based in Server Group, will draw on the talents of thousands of IBM professionals in Software Group, Research, and Global Services -- people on the leading edge of technical innovation.



## The foundations for eLiza on zSeries and z/OS are:

### Self-optimizing

The unique workload and self-management capabilities provided by z/OS Workload Manager (WLM) and the IBM zSeries 900 Intelligent Resource Director (IRD) allow z/OS to handle unpredictable workloads and meet response goals while utilizing substantial CPU and I/O with minimal human intervention for setup and operation, making it the most advanced self-managing system. zSeries workload management is enhanced in z/OS R2 to also allow workload balancing of

non-z/OS partitions, in particular Linux® images.

Workload management based on business priorities is exploited by Cisco routers and switches, CICSplex®, DB2®, and most recently, by WebSphere® 4.0.

### Self-configuring

msys for Setup significantly simplifies the management tasks for z/OS software setup. It reduces the total cost of ownership by lowering the required skill levels and by enabling customers to get their systems up and running more quickly.

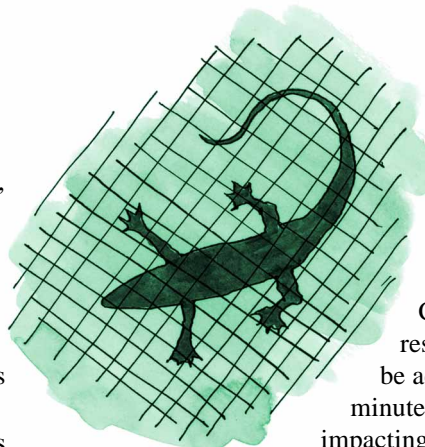
z/OS Wizards and Web-based dialogs assist in z/OS customization.

Capacity Upgrade on Demand and Concurrent Memory Upgrade make upgrading memory quicker and easier on the z900. Now, IBM offers concurrent memory upgrades without changing hardware -- provided there is enough uninstalled memory already existing on the memory cards.

### Self-healing

The hardware RAS items are just too many to be listed here as zSeries and S/390® have an enormous track record of advanced, leading edge self-management functions. Just to name a few:

- Various fault detections and even automatic switching to backups, where available (Chipkill memory, ECC cache, CP, Service Processor, system bus, Multipath I/O, . . .)
- Plug and Play and Hot swap I/O
- The zSeries Capacity Backup (CBU) is designed for customers



who have a requirement for Disaster Recovery.

CBU is very responsive (can be activated) in

minutes without impacting remaining capacity. This is normally

much faster and less costly than the alternative of recovery services by a service provider at a remote site. CBU can be tested to ensure all aspects of recovering capacity are addressed.

### System-managed CF structure duplexing

(new in z/OS R2) provides a robust failure recovery mechanism to enable near-continuous availability for Coupling Facility structure data. In the event of a CF related failure (or even a planned outage of a CF), failover to the remaining copy of the duplexed structures is initiated and quickly completed transparent to the CF structure user and without manual intervention, thus further increasing related applications availability.

### z/OS msys for operations

(new in z/OS R2) can:

- Increase availability of systems and applications by greater operational awareness and self-healing of selected critical resources
- Decrease total cost of ownership by reduced operations complexity and reduced outages due to operations errors.

### System automation for

**OS/390®** (SA OS/390) V2.1 is the leading Parallel Sysplex automation product. It provides policy-based self-healing of applications, system and sysplex resources. Its revolutionary manager/agent



concept can remove system boundaries, can take care of complex dependencies, and, through resource grouping, it can even automate and operate at a business application level.

Thus it can ease OS/390 management, reduce costs, and increase application availability. SA OS/390 automates I/O, processor, and system operations and includes "canned" automation for IMS™, CICS®, Tivoli® OPC, and DB2. Its focus is on Parallel Sysplex automation, including multi- and single-system configurations, and on integration with end-to-end Tivoli enterprise solutions.

### Self-protecting

Intrusion Detection Services (IDS) (new in z/OS R2) enables the detection of attacks and the application of defensive mechanisms on the z/OS server. The focus of IDS is self-protection. IDS can be used alone or in combination with an external network-based Intrusion Detection

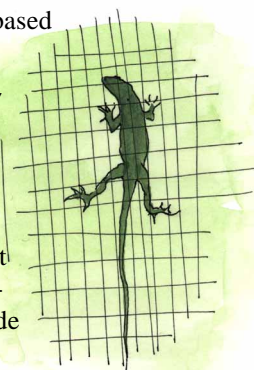
System. The IDS is integrated into the CS OS/390 stack and can provide the following functions unavailable from an external Intrusion Detection System:

- **Public Key Infrastructure (PKI)** is embedded in z/OS. PKI consists of a certificate authority (CA) that provides digital credentials to participants and a public-key cryptographic system that uses these digital credentials to help ensure overall message integrity, data privacy, signature verification, and user authentication. Together, these technologies provide the trusted infrastructure required for security-rich transactions over the Internet. Certificate authorities agree that PKI is critical for transaction security and integrity. New functions in this release extend the currently available Web-based front end to manage the entire lifecycle of a digital certificate that is based on PKI. Using the Web interface, digital certificates can be generated for both users with RACF® user IDs

and external clients. Additionally, certificates and certificate requests can be administered using the same Web-based front end.

- **Hardware security enhancements** include the IBM PCI Cryptographic Accelerator (PCICA) is a very fast cryptographic processor designed to provide leading-edge performance of the complex RSA crypto operations used in the SSL (Secure Sockets Layer) protocol. The maximum rate attainable is 3850 SSL handshakes/second. SSL is an essential and widely used protocol in secure e-business applications. The new PCICA feature is designed to address the high performance SSL needs of e-business applications, and has a design point different from the existing zSeries CMOS Cryptographic Coprocessor (CCF) and ▶

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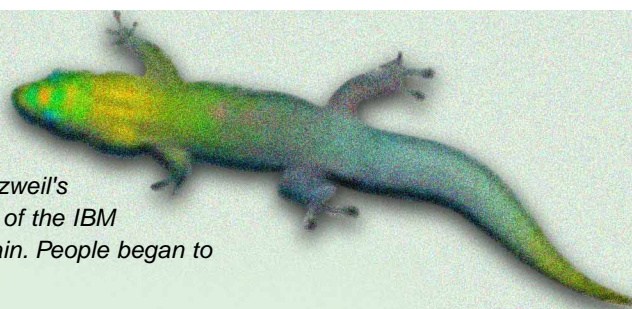
## Why the lizard?

*A few years ago IBM researchers, using assumptions in Ray Kurzweil's "The Age of Spiritual Machines," estimated the processing power of the IBM supercomputer Deep Blue® as roughly equivalent to a lizard's brain. People began to ponder why such a creature would need all that brain power.*

*The answer is apparent in the fact that the lizard has a far more complex task than a computer devoted to a single objective. Getting a machine to do one thing well -- like Deep Blue's beating a chess Grand Master or Blue Gene's unlocking the mysteries of protein folding, is truly a Grand Challenge, requiring tremendous power. But the environment is completely controlled and comparatively predictable. It is a single-minded pursuit under tightly circumscribed conditions.*

*The lizard, on the other hand, like all living organisms, has had the grandest of challenges -- survival, beginning millions of years ago, in a completely unpredictable environment requiring constant, instantaneous, instinctive -- autonomic -- responses to new demands and dangers. "It's a jungle out there!" That's why the lizard needs all that intelligence.*

*IBM @server has its own jungle to contend with, complete with totally unpredictable demands from unknown numbers of users, sudden threats from predators, and the thousand natural shocks the system is heir to. For @server, like the lizard, the Grand Challenge is survival through intelligent self-management.*



zSeries PCI Cryptographic Coprocessor (PCICC) features. The PCICA is designed specifically for maximum speed SSL acceleration rather than for specialized financial applications or for secure long-term storage of keys and secrets. As a result, it does not need the tamper design of the zSeries CCF and zSeries PCICC features. Workload is balanced across features by the system. This self-management capability is one of the advanced functions that enable z900s to efficiently run e-business workloads.

## Background information

Self-protecting enables servers to avoid intrusion and provide security in an e-business environment. The @server platforms have been centered on the Internet environment, and this has driven focus in certain areas (for example hardware encryption to drive SSL performance). All the @server platforms have common self-protecting elements which are:

**LDAP** - Lightweight Directory Access Protocol provides an Open Standard directory support that allows the directory to be queried from the current server or any system server within the enterprise that supports LDAP. Many of the deployed LDAP directory services are being used to store Security Related information. Directory servers provide a granular access control model to secure information stored in the directory. Directory servers utilize many of the security features in @server systems such as SSL, Kerberos, and hardware cryptographic support as well as features unique to the security services offered on the @server platforms.

**Kerberos** - Kerberos is not a new authentication method, but as Microsoft® chose to add this support to their operating system, Kerberos support was added to all

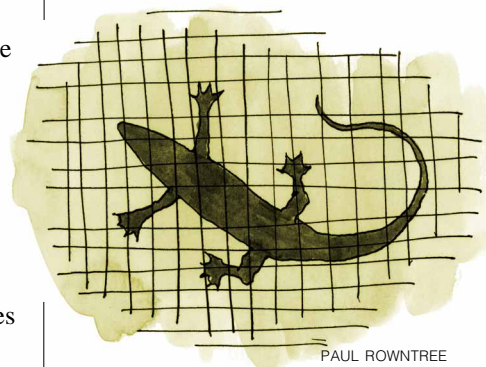
the @server platforms. This allows us to interoperate with Windows and all the other @server platforms. For example, if you logon to Microsoft Windows 2000®, the user can gain a Ticket Granting Ticket (TGT) to be passed to another server, and that TGT can be accepted by an @server server.

**SSL** - Secure Sockets Layer is the de facto standard of how people encrypt sensitive data on the internet. SSL drives encryption at the application level, where VPNs create tunnels where all the data is encrypted between two points. iSeries™ and zSeries provide general purpose interfaces to customers to create their own SSL, and all the e-servers incorporate SSL code within their Operating Systems. AIX® provides JSSE and SSLite for Java® applications. When a digital certificate is used for SSL, the Server/Application needs to know it is a valid certificate (just like credit cards, where they check if it is revoked, or stolen). LDAP is used to determine the validity of the certificate that represents the remote entity.

**VPN** - Virtual Private Networks are a way to create a secure tunnel between two places, where all the data flowing is encrypted. This takes the burden off of the application trying to decide what is sensitive, and encrypts everything. All the e-servers have participated in "VPN Bakeoffs," where all the leading VPN vendors come and do interoperation testing. On zSeries, VPN configurations can be stored in a directory service. The interoperability of the e-servers with other platforms has been verified by successful participation and certification by the ICSA Labs IPsec Product Program.

**Digital certificates** - Digital Certificates are more secure than User IDs and Passwords. For this reason, more applications are moving to utilize them. iSeries and

zSeries have system services to create digital certificates and the encryption key pairs that are needed, and also correlate them to the local identity (RACF or OS/400®). AIX supports digital certificate use in their VPN/IPsec solution. The leader in Digital



Certificates is Entrust. LDAP in zSeries has been Entrust Certified to be used with their product, which allows the Certificate Revocation Lists (CRLs) to be stored on z/OS LDAP.

**Hardware encryption** - For years, IBM has had hardware encryption products, but over the past several years, the 4758 product was created for the use of all @server platforms (x, i, p, and z) to help:

1. The financial and e-business companies have a highly secure encryption product, that would adhere to strict government laws
2. Provide a way to speed the SSL handshake freeing up the processor to do other work. Since data is not safe on the Internet, unless it is encrypted (usually using VPN's or SSL), being able to do it quickly and securely is a critical aspect of our servers.

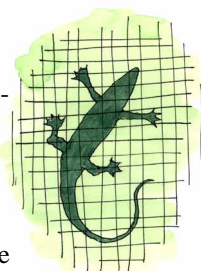
**GSKIT** - GSKit is a common toolkit that is reused within 60+ products across IBM. It implements the SSL protocol. ■



## The road to eLiza

(continued from page 4)

end-to end, cross-platform Project eLiza goals.



In z/OS V1R1, we introduced the msys component of the operating system. msys for Setup is intended to use best practices defaults and wizards to reduce the complexity associated with setup and configuration. Its initial delivery focused on more rapid deployment of a Parallel Sysplex® on z/OS. Customers looking for continuous availability rely on IBM's Parallel Sysplex capabilities. If you've ever installed one, you realize the level of effort and the number of areas that must be set in synch with each other to operate properly. Once set up the first time, it is fairly easy to keep up and running. Utilizing msys for Setup can greatly ease the burden of that first time setup of the Parallel Sysplex. And leveraging the msys technology makes it even easier to clone the configuration and update it for future system upgrades. Future focus for the msys development team is targeted toward the rapid deployment of Websphere Application Servers. Many z/OS customers are beginning to develop applications on top of Websphere to solve their e-business problems. Websphere utilizes a number of

new and valuable operating system components such as LDAP, Workload Manager (WLM) and Resource Recovery Services (RRS). The objective of a Websphere installation utilizing msys for Setup is to provide a more seamless, self-customizing installation and migration for Websphere and reduce the amount of human interaction and intervention required to get Websphere up and running in as short of time as possible.

Installation is just the start of successful workload deployment on z/OS. Operations is also a critical element of the execution of a workload. msys for Operations helps to avoid or recover from many potential system or component outages. Automated operations of zSeries alone is no longer sufficient when looking at an e-business related workflow. Future directions on the eLiza Road map include utilizing automated operations across the @server family to better facilitate workload management and disaster recovery needs of a business solution versus just one operating system that a piece of the workflow operates on.

IBM's objective continues to be satisfying the customer needs for five nines: 99.999% availability. That number alone states that errors are possible. As previously stated, our automated operations work is designed to avoid or automatically recover from any faults that may occur. When they do occur and a solution is made available, a fix must be deployed with little or no impact to the running system. Service Delivery can be troublesome at times. Advancements in SMP/E technology utilized for change management and fix installation, as well as

new delivery of corrective and preventive service, should make it much easier to maintain the z/OS operating system. Ultimately, it is our desire to allow a "one-button" request for service and installation. Most of the pieces of the technology exist today. We are now designing the workflows necessary to provide a more seamless installation of service. Ultimately, we would like to enable the electronic delivery of new operating system images and their seamless integration with an existing system image. ■

# Customers talk and we listen

BY DON SPANGLER

Customers talk and IBM listens. Our role as the z/OS Usability team is all about these conversations: listening to what you have to say about how to make the work you do with z/OS easier and more efficient, integrating your thoughts and needs in products that more effectively help you meet your business goals. Interactively working to collect feedback throughout the development cycle is central to IBM's User Centered Design process.

We conduct these conversations in a number of different ways. At conferences such as SHARE and z/OS and OS/390 Expo, we can be found presenting our latest projects in our booth or conducting hands-on demonstration sessions. You tell us what you think by providing us with feedback on projects and demonstrations, and by completing surveys that we hand out. We also develop important contacts with those of you interested in talking with us during more in-depth sessions. Subsequent sessions can range from individual or group conference calls to the usability testing of early prototype designs using online presentations or shared online sessions.

One example of how we collect and use your feedback was our recent z/OS ease-of-use survey. The link to this web-based survey was sent out to a contact list



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working on, along with opportunities to provide valuable feedback. This information is now on the new z/OS ease-of-use Web site, which will include much more up-to-date information on our activities and projects.

Visit the z/OS ease-of-use Web site at: <http://www.ibm.com/servers/eserver/zseries/zos/eou>.

developed from our conference booths. The link also appeared on the z/OS home page. The survey looked at three areas: how do customers define ease-of-use, in what task areas can ease-of-use improvements be of most help, and how much does ease-of-use influence platform or application decisions.

The results found that most people feel ease-of-use for z/OS means reducing the number of customization parameters and having more automated, less manual tasks. Software management and operations topped the list of tasks where ease-of-use improvements would be of value. Finally, around a third responded that ease-of-use influences their choice of enterprise platform or application deployment on zSeries. These findings along with additional feedback from you help in determining the direction and focus areas for improving the ease-of-use for z/OS.

In order to better work with you, we developed an e-newsletter with information on projects that we are

## User-centered design in action

### z/OS and OS/390 Web-based wizards

The wizards simplify your planning and configuration needs by exploiting recommended values and by building customized checklists for you to use. For configuration tasks, the wizards also generate outputs like jobs, policies, or parmlib members that you can upload to z/OS and use. The z/OS wizards are developed by creating an initial prototype design, which is then brought before customers for review. The input is then integrated into the design, and an updated prototype is produced. This may happen just once or multiple times, depending on the complexity of the wizard and the amount of input given by the customers. We also continue to request and utilize customer ideas for new wizards. You can find the z/OS wizards at: <http://www.ibm.com/eserver/zseries/zos/wizards>.

### **z/OS msys for Setup**

As part of an initiative to improve ease-of-manageability, the focus of msys is on the setup and configuration tasks for z/OS elements and products. Customers have been involved from the very early stages of requirements collection to drive the initial designs. Today, customers are involved in the usability testing of the workplace interface, and in providing feedback on new exploiters. Through interactive evaluation sessions, presentations, and beta programs, customer input has lead to enhancements that have significantly improved the usability and functionality of msys.

### **ServerPac**

As the complexity of installing and integrating large systems software has been increasing, improving the installation process has been a key area for ease-of-use. We have worked with hundreds of customers through many presentation and feedback sessions to identify the problem areas with install and more importantly, what could be done to improve the situation. See the article "Installing with ServerPac" on page 39 of this edition of Hot Topics for more details on ServerPac ease-of-use improvements and how customers have contributed.

### **WebSphere**

From their experience with WebSphere Application Server Enterprise Edition for OS/390, customers stated that installation and customization of the product

was too complicated and took too long. Based on their comments, experts at IBM's Washington Systems Center prototyped an interactive customization dialog. Similar to the z/OS Web-based wizards, the dialog guides you through defining WebSphere for z/OS customization options. The dialog generates jobs and samples according to options you supply, then builds a tailored set of instructions that take you through your initial WebSphere for z/OS setup.

After prototyping the dialog, a multi-disciplinary team of code developers, usability experts, testers, and information developers completed the development and testing work. The dialog was sent to beta WebSphere Application Server V4.0 for z/OS and OS/390 (WebSphere for z/OS) customers for early validation. Customers estimated the dialog cut their customization time by 50%.

The customer validation helped fine-tune the dialog to better meet their customization needs. The dialog eliminates the need for them to hand-tailor sample jobs supplied with the product. You define the customization options once in the dialog panels, then the dialog generates the jobs with your options, eliminating the need to define them in several places. The benefit is reduced typos and inconsistencies, and a quicker customization.

### **Identifying market opportunities for an IBM education offering**

Strategists for an IBM education offering looked to User Centered Design (UCD) to revamp their solution. They wanted to know how they could use additional technologies in their solution that

would help educators even more. The UCD activities would allow them to integrate potential customers into the design of a solution, so that the solution would more closely meet their customer's needs. This project team needed to do these UCD activities quickly. The project team called on the z/OS ease-of-use group to run their UCD process. They had 5 customers willing to give 3 days. We accomplished 6 activities: audience analysis, user task analysis and task map, solution opportunities and requirements, and low-fidelity prototyping. The result: a new design direction exciting to both IBM and our customers. ■



# Would you like fries with that?

## A roadmap of tools and tips that make ordering easier

BY DEBBIE BEATRICE



Wouldn't it be great if placing your next software order was as easy as asking for the #3 combo at your favorite fast food restaurant? Most of us agree that ordering software for the zSeries or S/390 platform is not as simplistic as ordering a hamburger, but you need not see it as a labyrinth either. We'll show you the tips, tools and shortcuts for planning and ordering software and publications. Believe it or not, you can do a lot of this without talking to IBM . . . if you don't want to.

### What's the latest news?

Before you're ready to place your order, there is a lot of planning to do.

What's the latest news about products and services? You need to look at IBM Announcements.

- Enhancements to products you already have
- Descriptions of new products and services that might help provide solutions to challenges facing you

- Prerequisite information, so that you can understand the relationships and dependencies between products.

You'll also need to know what's going on with:

- The industry
- e-business
- Conferences and education

**iSource** is a good place to start; it's available at <http://isource.ibm.com>. iSource enables you to subscribe to areas of interest and specific categories, notifying you of updates by e-mail. iSource uses the categories and profiles to consolidate information, reducing the number of e-mails you might otherwise receive.

**z/OS and OS/390 Planning Wizard for e-business**, available at <http://www.ibm.com/servers/eserver/zseries/zos/wizards/ebiz/>, uses an interview technique to determine the options for Web-enabling your applications products based on your environment. You answer a few questions, and the wizard recommends a scenario that best fits your needs. For example, in a CICS environment, are you using CICS Host on

Demand, CICS Web Support, or CICS Transaction Gateway? For DB2 applications, are you using Net.Data, JDBC, or SQLC? How about Websphere Application Server, using Enterprise Java on z/OS or OS/390? On Linux for zSeries?

The wizard provides scenarios that include:

- An overview of the solution
- Considerations
- Software and hardware requirements
- Security considerations
- Reference documentation
- Services and offerings that help you implement the solution

Finally, **IBMLink™** (<http://www.ibmblink.ibm.com>) provides you with an online index, making it easy for you to locate the specific information you need. A number of IBMLink functions are publicly available, such as those providing general and ordering information, IBM sales manuals, announcement letters, IBM news, and education information.

### ShopzSeries makes ordering software a breeze

What are some of the biggest headaches when it comes to placing a software order?

- Mapping out what you already have installed to a product checklist.
- Then, you need to determine if there is a more current level of that product available. Does your current license entitle you to it?

- Figuring out prerequisites without going through endless iterations of exchanges between either your rep or the Sales Center.
- Finding out the status of your order.

ShopzSeries (formerly known as ShopS390) is a key component of enabling you to be more self-sufficient when it comes to ordering products and services. ShopzSeries can prefill a ServerPac® order, using your SMP/E CSI. ShopzSeries also identifies products that have been upgraded and whether you are entitled (no additional charge) to that upgrade. ShopzSeries does this right on the checklist, using icons. ShopzSeries also identifies any installation prerequisites before you actually have placed your order. This is particularly handy if you using ShopzSeries as a tool to explore different product options and scenarios. Not to mention that it sure beats finding out about a missing prereq because your order cannot be processed.

ShopzSeries provides additional one-stop functions that enable you to track the status of your order; you don't need to go to other Web sites, remember your order number, or dig up a separate user ID and password.

If you're not ready to order, you can use the My licenses function to display a number of reports related to your current licenses. This is handy as a means of checking what you are licensed for with what you have installed.

You may have read about the ShopzSeries enhancements in the August 2001 Hot Topics issue, but the ShopzSeries team is never satisfied. In 4Q/2001, support for ordering both preventive and corrective service has been added.

ShopzSeries already supported the ability to specify what service should be included with your CBPDO orders and support for service-only CBPDO orders.

Now, you can order service as:

- Corrective service - specific PTFs or APARs
- Preventive service - Recommended Service Updates (RSU)
- Recommended Service Updates (RSU) + Hiper/PE reach-ahead
  - This option can use your installed inventory (bitmap) so that we send you only the PTFs you need -- not duplicating service you already have.

Now, here's the big news! Not only can you place service orders on the Internet, you can have them delivered over the Internet too. It is as easy as selecting Internet as your delivery media (if it is available for your order), and when your order is ready you will receive an e-mail. You then return to ShopzSeries and can view the details of your order, then initiate the download.

ShopzSeries will be the cornerstone interface for integrating the ordering of software and service with its Internet delivery. Stay tuned for lots of functional enhancements in this area.

Check out ShopzSeries at:  
<https://www.software.ibm.com/ShopzSeries>.

For additional information about Internet delivery, visit:  
<http://www.ibm.com/servers/eserver/zseries/zos/epdo/>.

### **Finding, downloading, and ordering publications**

The IBM Publications Center (<http://www.ibm.com/shop/publications/order>), is truly your one-stop site for not only ordering IBM publications, but also downloading the many publications that are free

of charge. The site provides an easy way to order publications in addition to the traditional ordering by phone, fax, and mail. A limited number of non-IBM publications are also available from this site. The IBM Publications Center supplements the various library pages and Information Centers available. Its functions include:

#### **Searching**

The Publication Center search capabilities make it easy to find publications and collections, based on partial titles, publication form numbers, or product numbers.

The Publication Center even lists those publications updated in the last ten days, so you know what is hot off the press.

#### **Downloading**

After locating your publications, the list identifies those that can be viewed online and downloaded, and presents the various formats that are eligible for download (such as Adobe Acrobat and BookManager).

#### **Ordering**

You can place an order for your publications (individual publications or collections on CD) directly from your search results. Did I mention that we accept many major credit cards?

#### **Tracking**

You can also track your order right from the Publications Center.

Recently, the Publications Notification System (PNS) was consolidated with the IBM Publications Center and now appears as a "related site." PNS provides you with a more centralized means of subscribing to information about updates to publications and collections. You subscribe by product number, form number or publication number. When the publication is updated, you'll get ►

an e-mail (it doesn't automatically send you the updated publication). As some of us recall . . . PNS reflects the latest evolvement from System Library Subscription Service (SLSS).

What set of tips about ordering publications would be complete without pointing to our *IBM*

*Redbooks™* (<http://www.Redbooks.ibm.com/>)? This site provides you with everything from online Redbooks to CDs. There is also a schedule of upcoming workshops.

Use the Mailing List function to identify areas of interest so that you can automatically be notified of availability of Redbooks

related to those categories. I have found this feature to be particularly handy. In 4Q/2001, the Redbook subscription process was also integrated with iSource.

**So, go on out and shop 'til you drop. ■**

## All aboard for the first stage of sub-capacity WLC

BY JOHN URBANIC

Has this ever happened to you? You're in a busy train station, sitting near the gate and waiting to board your train, when the announcement comes over the PA system: "Train 659 to Chicago has been delayed . . ." Wouldn't it be great if, when your train is delayed, the train company gave you the choice of taking a different train, so that you could reach your destination on time?

That's what we're doing for you in terms of sub-capacity Workload License Charges (WLC). You've probably heard that IBM License Manager has been delayed. In the meantime, we're offering you a different train to take you to the first stage of your final destination: sub-capacity WLC. It's called the Sub-Capacity Reporting Tool.

The Sub-Capacity Reporting Tool helps you determine, on a z900 CPC running z/OS, your defined capacities for VWLC products. It generates a Sub-Capacity Report that you send to IBM. The report is used to determine your charges for

VWLC products. Use this tool to implement the first stage of sub-capacity WLC.

We recommend that you move any reports from the mainframe to your desktop and then use a spreadsheet program (such as Lotus® 1-2-3® or Microsoft Excel®) to view the reports.

You can download this tool from the WLC tool Web site: [http://www.ibm.com/zseries/wlc\\_lm/tool.html](http://www.ibm.com/zseries/wlc_lm/tool.html).



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For more information, see *Using the Sub-Capacity Reporting Tool*, SG24-6522.

### Sub-capacity WLC process

Once you have signed the WLC attachment to the IBM Customer Agreement (ICA), you must do the following to implement WLC:

1. Collect, for a month, SMF type 70 and type 89 records. You must collect the records from the second day of a month to the



first day of the following month to qualify for sub-capacity charges for the following month.

2. Download the Sub-Capacity Reporting Tool from the WLC Web site.
3. Run the Sub-Capacity Reporting Tool on each z900 CPC where you plan to implement sub-capacity WLC. Use the SMF records as input to the tool.

The tool provides information on LPAR names, LPAR sizes, and the VWLC products running in each LPAR. It produces a report in the form of a flat text file, with comma-separated values.

4. View, and if necessary, update the report as indicated in Using the Sub-Capacity Reporting Tool.

For example, if you have had special circumstances during the reporting period, such as a disaster recovery situation, you can edit the report to indicate alternate product capacities for VWLC products and include an explanation of the variance. Note that the report is the basis for your next month's bill.

Before submitting the report to IBM, the system programmer who runs the tool may need to have the Software Asset Manager add accounting information, such as a purchase order number, to the report.

5. Submit the report to IBM via e-mail. You can submit the report on the 2nd calendar day of the month but no later than the 9th calendar day of the month. The e-mail address where you must send the report appears in the Exhibit section of your WLC Attachment to the ICA.
6. Assign a person in your organization to resolve any questions on or inconsistencies between

the reports and the configuration data reported by the Remote Support Facility (see the section "How your information is verified" below).

Note that for some VWLC products it is not possible to collect SMF type 89 records. For these products, and for z/OS running under VM, you will need to determine your LPAR and product capacities and enter this information into the report you send to IBM.

### When a VWLC product capacity changes

Once you have submitted a report for the first time, you do not have to resubmit one the next month unless your capacities change. (If IBM does not receive a report for a particular month, your current bill will be carried over for the next month.)

However, you must submit a report at least once per quarter, even if your capacities stay the same.

For any changes you make (from the second day of a month up to and including the first day of the next month) that result in a change to your reported VWLC product capacities, you must submit a new report. Changes you make, for example, on or after October 2nd up to and including November 1st must be reflected in a new report and submitted by November 9th. These changes will be effective on November 1st.

Note that the output from the Sub-Capacity Reporting Tool cannot be used to enable or disable features or add or remove products.

### How your information is verified

The first stage of implementing sub-capacity WLC uses Transmit System Availability Data (TSAD), which is sent to IBM via the Remote Support Facility (RSF) available on z900 processors.

A subset of this information is used to verify that the product-defined capacities in your report are consistent with your actual configuration. Therefore, if you have not already done so, you should configure your system to send TSAD weekly to IBM via RSF. Failure to submit TSAD may result in your installation being charged for VWLC products on a full capacity basis. Your IBM Customer Engineer can enable for you the weekly transmission of TSAD via RSF when your z900 is installed. Or you can set it yourself either during or after installation. For more information on setting an RSF event, see the "Transmit System Availability Data" task in the "Scheduled Operations" section of *Hardware Management Console Operations Guide, SC28-6805*.

If your system does not send TSAD to IBM via RSF, you can send the information manually by mailing a diskette to IBM. See the procedure in the "Transmit Service Data" task in *Hardware Management Console Operations Guide*. Then, label the diskette with the CPC type, model number, and serial number, and send it to the following address:

Server Group zSeries RAS  
Engineering  
B64A/707-2B86 (MS-P317)  
2455 South Road  
Poughkeepsie, NY 12601

Yes, sub-capacity WLC is available to you today through the use of the Sub-Capacity Reporting Tool, which provides an interim solution pending the availability of IBM License Manager. ■

# System Automation for OS/390

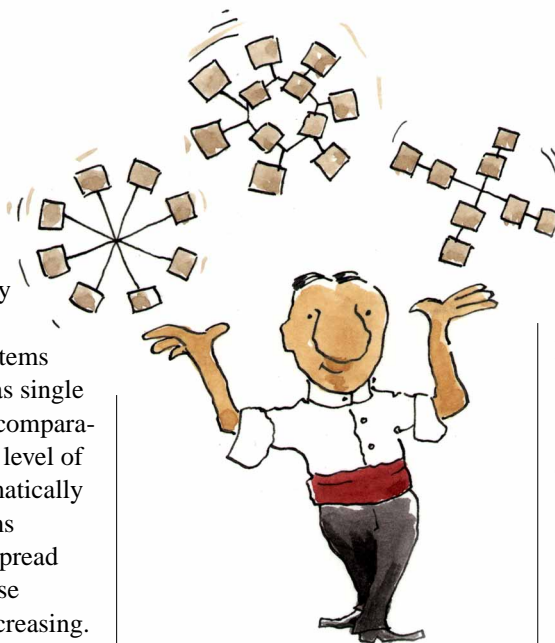
## *Policy-based self-healing increases efficiency and system availability for your enterprise*

BY RAIMUND THIELKER

Today's applications no longer run on isolated single systems. For availability and scalability reasons, applications are spread across multiple systems pooled to clusters. Whereas single system applications were comparatively easy to manage, the level of complexity increases dramatically with the number of systems application instances are spread across. The number of these application instances is increasing. Even more, the number of dependencies between the application instances is increasing. And there are dependencies as well to other software and hardware components within a cluster. The complexity now has come to a point where intelligent programs are required to not just assist operators and system programmers in their job, but also to take over responsibility for managing applications and their dependencies within a cluster.

Therefore ease-of-use has become a critical factor for the availability of system clusters like Parallel Sysplex.

With Project eLiza, IBM takes the next step: with systems that self-optimize, self-configure, self-heal and self-protect, Project eLiza will enable IBM to start removing the complexity of ever-expanding e-business infrastructures and help you overcome systems management challenges. System Automation for OS/390 (SA OS/390) V2.1 builds the foundation for Project eLiza by providing policy-based



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self-healing and by building the base for msys for Operations, the built-in z/OS self-healing. The unique automation technology of SA OS/390 plays a key role in building the end-to-end automation of Project eLiza. IBM eLiza information is available at: <http://www.ibm.com/servers/eliza>.

### **How does System Automation contribute to ease-of-use and Project eLiza ?**

The unique and rich functions of System Automation for OS/390 (SA OS/390) V2.1 can ease z/OS and OS/390 management, reduce costs, and increase application availability. SA OS/390 automates I/O, processor, and system operations and includes "canned" automation for IMS, CICS, Tivoli OPC, and DB2. Its focus is on Parallel Sysplex automation, including multi- and single-system configurations, and on integration

with Tivoli enterprise solutions, like the Tivoli Enterprise Console (TEC).

It is now possible to automate Parallel Sysplex applications by virtually removing system boundaries for automation.

The main goal of System Automation for OS/390 (SA OS/390) V2.1 is to make a Parallel Sysplex cluster no more difficult to operate or manage than a large single system. The previous version of SA (1.3) offered unique sysplex automation functions like enterprise-wide single point of control, sysplex-wide single system image and the Parallel Sysplex Operation Center. SA OS/390 Version 2.1 includes all this and much more.

To automate Parallel Sysplex applications, new concepts are required to handle cross-system dependencies, reduce complexity, increase availability, ease operations, and model your configuration. SA OS/390 V2.1 introduces these required new concepts and makes automation of true Parallel Sysplex applications a reality by offering:

- A new manager/agent design
- Grouping of resources and definitions of business applications
- Powerful dependency support for modeling a configuration
- Goal-driven automation

Elements of the automation engine have been separated in SA OS/390 V2.1. Those that observe, react, and take action remain within the NetView address space. This portion is known as the automation agent and must be present on every system to be automated.

The coordinating, decision-making, and controlling elements are grouped into a single new address space known as the automation manager. It is loaded with a model of all the automated resources defined across the entire Parallel Sysplex cluster. The automation manager communicates with the automation agents on each system via XCF (Cross-System Coupling Facility) and MQSeries for OS/390 V5.2 shared queues. It receives updates about the status of resources in its automation model and sends orders to the agents when various conditions within the model are encountered.

The real beauty of this design is that multiple systems can be automated from a shared automation policy that is maintained in a central location. For the first time, a true single S/390 automation instance is possible.

### **Parallel Sysplex application automation**

A Parallel Sysplex application can be automated as a whole, no matter how many resources it consists of and where they are. Resources can have complex dependencies, can be started and stopped as required, and can be moved to other systems.

### **Simpler operations through goal-driven automation**

The automation manager decides when and where resources need to be made available or unavailable using its awareness of status, dependencies, and location of all resources and prioritized operator

requests and policy goals specified by the automation administrator. This goal-driven automation greatly simplifies operations: operators just request what they want, and SA OS/390 takes care of any dependencies and resolution of affected or even conflicting goals.

### **Reduction of complexity with groups**

Sysplex-wide grouping of resources and definition of aggregate or business applications can greatly reduce the complexity of automation definition and operations. Groups free operators from knowing the various pieces of the application.

The SA OS/390 V2.1 Group Concept will offer much more than just a means of sorting resources. As an example, it provides a means to pool resources where one set of resources is supposed to be active whereas the other set within a group represents all backup resources. In case of an active resource failure SA OS/390 will manage to restart backup resources. This way SA OS/390 will try to keep a policy defined minimum number of resources active.

### **Automate your e-business**

Since summer 2001 SA OS/390 provides integrated, policy-based z/OS UNIX applications automation. A new infrastructure can be used to start, stop, monitor and recover z/OS UNIX applications and resources like TCP/IP ports and UNIX files. Building on top of this new infrastructure and the unique power of its policy, it is now possible to automate a complex SAP R/3 environment to achieve superior failover capabilities, without writing a single line of code.

### **Group and conquer**

For SA OS/390 V2.1, a group is a collection of resources that can be distributed within a Parallel Sysplex cluster. A group can be a part of any dependency or other group. Resources can be members of multiple groups and are referred to by a sysplex- or system-wide unique name.

Exploiting groups is beneficial in many ways:

- Automation definition and operations can be greatly simplified through grouping resources and even business application definitions.
- Groups enable you to monitor the most important business applications and to be sure that everything they require is available.

Groups make operations easier by showing the aggregated status of resources and by group actions like startup or shutdown.

Through groups, operators are freed from knowing the various pieces that make up an application, their dependencies, how to start or stop them, and so on.

### **Powerful dependency support**

Resources can have complex dependencies of different kinds in and outside of an application. SA OS/390 V2.1 gives you the power to define these dependencies, so that applications always get what they need, are started in the right order as quickly as possible, and are shut down fast without interference. Thus definitions for resource dependencies can involve:

- Preparing for startup and shutdown
- Startup and shutdown
- Resource availability or unavailability
- Enabling the automation to change a resource's status to achieve a goal



## Goal-driven automation

In SA OS/390 V2.1, the emphasis has also switched from purely command-driven automation to goal-driven automation. Automation programmers now define the default behavior of the systems and application components in terms of dependencies, triggering conditions and scheduled requests. The automation manager works to keep systems in line with these goals and prioritized operator requests by using its awareness of status, dependencies, and location of all resources to decide what resources need to be made available or unavailable, when, and where. The number of checks and decisions it has to make can be very high. A human simply can't do the same as fast and reliably as the automation manager.

Goal-driven automation greatly simplifies operations. Operators just say what they want, and automation takes care of any dependencies and resolution of affected or even conflicting goals. Sysplex-wide automation also can remove the need for specifying extra configurations for backup purposes. Instead, cross-system dependencies and server and system goals can be used to decide which backup system is to be chosen.

## Easy to use graphical user interface

The system operations GUI for SA OS/390 2.1 uses the Java-based platform-independent NetView® Management Console of Tivoli® NetView for OS/390.

It displays comprehensive system and application information, including dependencies, and offers point-and-shoot operation with easy-to-use, context-sensitive command menus.

Problem management functions allow resource marking to indicate to other operators that a problem is being handled. Exceptions can be created dynamically out of NetView messages and can be added to the graphical interface for visual correlation.

## I/O Operations

I/O Operations increase system availability and operator productivity. I/O Operations allows operators to make operational changes to zSeries and S/390 I/O configurations FICON, ESCON and non-ESCON in a safe, system-integrated way. No need to walk to the multiple system or ESCON director consoles anymore. To help operators make those changes or perform I/O problem determination, it provides accurate, multi-system, up-to-date I/O configuration information (both text and graphic) extracted directly from the active I/O configurations of an enterprise. I/O Operations performs its control operations across multiple systems in a centralized and system-integrated manner including two-phase commit where every system can vote, thus helping to ensure system integrity. This helps prevent failures due to human errors like forgetting to take resources offline on some systems or varying off devices that are in use.

If running at OS/390 v2.9 or higher, I/O Operations also integrates with the combined Hardware Configuration Definition (HCD) and the I/O operations GUI of SA OS/390 is based on OS/390 Hardware Configuration Manager (HCM) V2R9. New functions in OS/390 HCM V2R9 provide visual displays of the I/O operations status for the active S/390 I/O configuration. HCM now cooperates with the SA OS/390 I/O operations component to display color-coded status information and active switch paths directly on the existing HCM configuration

diagram. OS/390 operators also can retrieve detailed node element information and issue I/O operations connectivity commands while working at the HCM workstation. These enhancements provide powerful new tools for fast and effective problem resolution. HCM is now the single, graphical interface for all I/O definition and monitoring functions. In addition, integration with HCD also gives you Path Validation Reports allowing comparison between planned and active configurations.

For more information about HCM, please refer to: <http://www.ibm.com/servers/eserver/zseries/zos/hcm>.

## Processor Operations

Processor Operations helps operators manage more systems with greater efficiency. One operator in one location can initialize, configure, monitor, shut down, and recover multiple systems -- both local and remote -- and respond to a variety of detected conditions. The operator, using one standard interface, can do all that across multiple types of systems. Automated routines for frequently used functions speed the work of skilled operator and assist less experienced operators to become more productive.

## System Automation for OS/390 requirements hardware

### Processor

- Any IBM ESCON-capable processor or equivalent that is supported by a minimum level of OS/390 Version 2.6
- IBM System Automation for OS/390 processor operations supports monitoring and control functions for IBM zSeries (. . .) and any of the following S/390 processors: (9672, 9674, 2003, 3000, 9121, 9021, 3090, 308x, and 4381)

- The IBM System Automation for OS/390 I/O operations base program can run on any processor that has at least one ESCON channel installed and defined to the IOCP.

#### Key Software Requirements

- OS/390 Version 2 Release 6 (5647-A01) or higher or z/OS (5694-A01)
- Tivoli NetView for OS/390 1.3 (5697-B82)

#### Key Functional Requisites

- Security Server (or compatible products) optional feature in OS/390 V2R6 for sysplex-based authorization and SAF-based NetView authorization
- IBM MQSeries for OS/390 V5.2 (5655-F10) with shared queues for sysplex automation functions (optional for a continuous, highly-reliable automation environment)

#### Workstation Requisites

- Tivoli NetView for OS/390 1.3 (5697-B82) with NetView Management Console Server and Client and NetView Management Console 3270 for NMC Exploitation
- Hardware Configuration Manager (OS/390 HCM V2R9) for the I/O operations GUI ■

## What's brewing with System Automation?

### More "wizardry" from IBM

BY JIM STEIPP AND MARY ELLEN COLEMAN



PAUL ROWNTREE

The wizards at IBM have brewed up another potion to help you configure elements of z/OS. This new wizard helps you set up and configure msys for Operations, a new element in Release 2 of z/OS. This element incorporates, for the first time, basic system automation controls in the operating system. msys for Operations addresses two requirements:

1. It automates your system's responses to the following events:
  - WTO/WTOR buffer shortage
  - System Logger offload failure
  - Syslog start failure
  - Couple dataset loss
2. It simplifies your operator's day-to-day tasks of sysplex management

If you decide to take advantage of msys for Operations, you no longer have to worry about maintaining automation for new or changed messages. The wizard tailors the automation features you choose based on simple selections you make in the wizard's interview topics.

Note that msys for Operations requires VTAM with XCF for its cross-system communication and it uses NetView. The wizard also assumes that you are using IBM's RACF or a comparable security product for controlling operator authorization. The wizard generates RACF definition statements if you are using RACF to use it to control operator access. However,

you can use NetView's own security controls instead of RACF's or you can control security yourself.

If you are already using IBM's System Automation for OS/390 or an equivalent product, you do not need to configure msys for Operations or use the wizard. You are probably handling these and many other operational events already. Of course, you can use msys for Operations to automate some of these tasks and still use your existing automation product for other tasks.

The msys for Operations wizard operates like many of the other wizards that IBM has created for z/OS users. It has a series of four interviews that guide you through the information gathering process. The interview topics are:

1. Specify your system environment
2. Specify your security product and authorize operators and commands ▶

3. Specify your communications environment (VTAM and NetView)
4. Enable msys for Operations functions

And, like the other wizards, it produces the PARMLIB, PROCLIB, JCL statements you need to configure msys for Operations in an output checklist tailored to your installation. You can either upload these items to your host as is or cut and paste individual statements into your existing definitions. The wizard guides you through it all.

### **Some neat features of this wizard**

The msys for Operations wizard includes a couple of special features: an input worksheet and a default configuration checklist. The input worksheet helps you gather the information you will need for the interviews prior to actually using the wizard. It can be very annoying to get half way through filling out an interview only to discover that there is information that you don't have. You must interrupt what you are doing and go off and find the missing information before you can return to the wizard and continue. The default configuration checklist summarizes the steps necessary to configure msys for Operations. If you prefer not to use the wizard, you can do the setup yourself using the information and examples provided in the default checklist.

#### **Topic 1**

##### ***Specify your system environment***

This topic focuses on your sysplex. It asks for information about where you have installed msys for Operations, where critical datasets are and how your sysplex is organized. You created much of the information when you set up your sysplex.

#### **Topic 2**

##### ***Specify your security product and authorize operators and commands***

This topic collects information about the security product that you are using and helps you define the operators who will have access to msys for Operations, along with their level of authorization.

#### **Topic 3**

##### ***Specify your communications environment (VTAM and NetView)***

This topic inquires about your VTAM and NetView items that it needs.

#### **Topic 4**

##### ***Enable msys for Operations functions***

This topic lets you choose which msys for Operations functions you want to enable. Depending on the function you choose, it asks for additional information such as couple dataset volumes and how you want the system to handle buffer shortage situations.

### **A final thought**

The msys for Operations wizard offers one more link in a chain of IBM wizards that help simplify your task of planning for and setting up z/OS. They can save considerable time and effort, even if you decide you only want to use their output as a guide to doing your own set up. As one system programmer who helped us test the wizard said, "This wizard is ideally suited for me, especially since I am not very familiar with NetView. I don't have to spend a lot of time trying to research the information I need. If I can go right through the wizard, in about two hours, I can have msys for Operations up and running, even taking some misteps into account." ■

For more information on msys for Operations, please visit us on this Web site:  
<http://www.ibm.com/servers/eserver/zseries/msys/msysops/>.

The msys for Operations wizard is available along with the other z/OS wizards on the following Web site:  
<http://www.ibm.com/servers/eserver/zseries/zos/wizards/>.

***With the msys for Operations wizard, see what automated spells you can cast!***



# Yes! We support the independent software vendor

BY CHUCK CALIO

IBM's z900 customers continue to embrace a combination of commercial software and freeware on the z900 platform. Let's explore one set of the z900 application portfolio: Commercial software from Independent Software Vendors (ISVs). I think you'll be pleasantly surprised at the progress being made with ISV support for the z900 !

## Did you know

- Over 2000 Software Vendors offer over 5000 applications that run on IBM's z900
- Over 60 Software Vendors completely new to z900 brought products to market on z900 in the second quarter of 2001. Examples include Sendmail, Bynari, KAI and many others
- Major cross-industry ISVs, such as SAP, PeopleSoft, Siebel, i2, Lawson, Iona, Tibco, Oracle, BEA and many others offer products on z900
- Major industry-specific ISVs, such as TSA, Security First, ALLTEL, Castek, CBS and many others offer products on z900
- Over 25 ISVs support Websphere on z900
- Both new and traditional z900 software vendors have embraced Linux on zSeries, producing almost 100 applications generally available from ISVs on Linux for zSeries
- IBM has worked closely with over 20 ISVs in 2001 on joint performance and stress test projects on high-end z900 hardware

All of the above support from ISVs, combined with a strong portfolio of IBM Software,



PAUL ROWNTREE

Freeware and the enhanced popularity of IBM's e-servers are major contributors to the tremendous success of the z900 platform. New workloads and New ISVs are driving close to 60% of the new z900 MIPS IBM ships!

IBM has multiple programs in place to support the above ISV efforts on z900. These programs, administered by the IBM zSeries Solution Enablement team (based in Poughkeepsie NY, with an IBM worldwide support team), include:

- Proactively working with ISVs and customers to help identify the business opportunity for ISV products on zSeries
- Jointly working with ISVs and IBM customers to validate the business opportunity for ISV products on zSeries
- Working closely with ISVs on a variety of technical and educational programs designed to fast track the enablement of ISV products on zSeries

- Working closely with ISVs on providing low cost S/390 and zSeries hardware and software access
- Working closely with ISVs and IBM customers on joint proof of concept testing engagements at the IBM e-business transaction processing centers
- Working closely with IBM and ISVs on over 10 different joint IBM/ISV marketing and sales support efforts

All of the above z900 activities are coordinated with the 'one IBM' general ISV partner management program, called PartnerWorld, to ensure a consistent approach to the relationship between IBM and ISVs.

How about some specific customer success stories on IBM z900 customers running ISV products on the z900? Recent examples include :

- Bank of Montreal using BMC products on a z900
- Deutsche Telekom running a Siebel solution on an IBM z900
- Winnebago and LL Bean using products from Bynari and Sendmail on Linux for zSeries

Check out many others at:  
<http://www.ibm.com/servers/eserver/zseries/solutions/s390da/applications/success.html>.

ISVs, with the help of IBM, are on track to deliver over 1000 new or updated applications on z900 by the end of 2001. IBM's working closely with ISVs to enable exploitation of z900 technologies such as Hipersockets, 64-bit real and virtual, Crypto, and software technologies like z/OS, Linux for ►

zSeries, VM, IBM License Manager, Parallel Sysplex, Workload Manager, Unix Systems Services, eLiza, WebSphere, JAVA and XML on zSeries.

The interest and support from ISVs on z900 or the previous

mainframe platforms (S/360, S/370™, and S/390) that spawned it has never been greater!

An inventory of ISV applications available on the IBM mainframe can be seen on the zSeries ISV

team's home web site at URL <http://www.ibm.com/servers/eserver/zseries/solutions/s390da/>.

Feel free to contact the IBM zSeries enablement team by sending an e-mail to: [s390pid@us.ibm.com](mailto:s390pid@us.ibm.com). ■

## z/OS platform maintenance just got easier!

BY GREG DAYNES AND JANICE PETERSON

If you are a system programmer in the zSeries (S/390) community and find yourself saying, "I see all the improvements IBM is making in its product line, but what are they doing for service?", read on. IBM is facing the service issue head-on with improvements in quality, delivery and ease of installation.

In the past, many of the key product families on the OS/390 or z/OS software platform had different recommended maintenance strategies, with little or no coordination between them. This had the potential to cause confusion for you, since it was sometimes unclear what level of service each product or subsystem was recommending. In an effort to eliminate this confusion, IBM established the Consolidated Service Test (CST) team. This cross-product team's mission is to enhance the way IBM tests and to come up with one consistent recommendation for maintenance for z/OS and OS/390 software, including the major subsystems.

This recommended level of service now goes through additional testing in a customer-like sysplex environment, using industry representative workloads, for all of the following

products: z/OS or OS/390, CICS Transaction Server for OS/390, DB2 UDB for OS/390, IMS and MQSeries® for OS/390. As the scope of CST expands, additional products will be added.

IBM has also changed its recommendation for service and redefined the Recommended Service Upgrade (RSU) for the z/OS and OS/390 platforms. This new recommendation is complemented by the additional testing performed by CST. Like the prior RSU process, recommendations come out monthly in the form of SMP/E ++ASSIGN statements. However, for the products listed above, the new recommended level of service has undergone a number of

changes. Perhaps the biggest change is that this new recommended level of service has gone through a CST monthly test cycle prior to becoming recommended. This additional test cycle allows IBM to identify and eliminate problems that may occur when the products are integrated together. This change in when the recommendation is made affects when the PTFs are assigned an RSU SOURCEID. That RSU SOURCEID no longer reflects when the PTF closed. Rather, it now reflects when the service completed the test cycle and became recommended. The PUTyymm SOURCEID can be used to identify when a PTF closes.



DIANE ATTEBURY

Keep in mind that the date that a PTF is marked recommended does not affect when that PTF is available for corrective service - that remains unchanged. When SOURCEIDs such as HIPER or PRP (PTFs that resolve PE'd PTFs) are assigned also remains unchanged.

The next change to the new recommended level of service is that it is now based on a different criteria. Each quarter, all service (Severity 1, 2, 3 and 4 APARs) as of the end of the prior quarter will have completed a CST test cycle, and will therefore become recommended. Additionally, each month HIPER PTFs, PTFs that resolve PE PTFs and other fixes as warranted that have completed a CST test cycle will become recommended. Both the quarterly and the monthly recommendations use the same RSUyymm SOURCEID notations, so you can identify the quarterly recommendations by their month values (e.g., RSUyy03, RSUyy06, RSUyy09 and RSUyy12). The monthly RSUs are recommended for those customers whose preventive strategy requires more frequent maintenance updates. As always, you should review HIPERs and PE Fixes on a regular basis and install those applicable to your environment.

Because the new RSU recommendation is a consistent maintenance recommendation across the z/OS and OS/390 platform products, it becomes much easier to know what preventive maintenance to install at any given time. The "new" recommendation is to install service quarterly, and you can do this by getting the most recent RSU (available via CBPDO, ESO, SUF and ShopzSeries) and APPLY using the SOURCEID of RSU\*. The actual SMP/E statement becomes much simpler than before:

```
APPLY CHECK XZREQ
GROUPEXTEND(NOAPARS,
NOUSERMODS)SOURCEID
(RSU*,HIPER,PRP)BYPASS
(HOLDSYSTEM,HOLDUSER).
```

The recommendation also advises getting Enhanced Holddata to check for PEs and missing HIPERs, and to monitor and APPLY appropriate HIPER/PEs between maintenance cycles.

The changes to the SOURCEIDs for the new RSU recommendation went into effect in September, 2001 (available in November in CBPDO) and as of November 2001, ServerPacs were updated to integrate to the recommended service levels.

Now that you know what IBM's maintenance recommendation is, wouldn't it be great if you could order it and get a service package tailored to your specific environment, sent to you electronically, in a matter of hours as opposed to getting a box of tapes in a few days with a lot of extra service that you don't need? Well, you can! IBM has added a new feature to its online z/OS software ordering tool called ShopzSeries at: <https://www.software.ibm.com/ShopzSeries>.

ShopzSeries service ordering capabilities have been extended beyond Service Only CBPDO. With this new capability, you will be able to order the following:

- **Corrective Service** - Individual PTFs and APAR fixes
- **Preventive Service** - Recommended Service Upgrade (RSU) for a System

For Corrective Service, you specify either a list of PTFs or list of APARs and some information to determine which requisites need to be sent. You send this to IBM and we determine what service is needed, including ALL requisite

service and resolution of any PE chains. The service is then either available to be downloaded electronically or sent physically on 3480 cartridges.

For Preventive Service, you run an SMP/E job which creates a bitmap of your SMP/E CSI (which is a simple way of saying a history of all the PTFs that have been RECEIVED and APPLIED in the CSI you indicate in a concise format of bits), IBM can figure out what service is required to bring your system to the latest RSU level. We will then create a package for you containing the correct RSU maintenance. The package will eliminate all PTFs that you have already RECEIVED as well as include any PTFs that it determines you need as requisites. It can even contain resolution of known PEs. Since your service order is based on your target SMP/E environment, it can be delivered quickly because it is not going to include any extraneous service.

For either Corrective Service or Preventive Service you can track the status of your order until it is ready for you to pull down to your workstation. Once you have the order on your workstation, you can FTP it to your mainframe and install it with the simple SMP/E APPLY statement given above. Eventually, you will be able to RECEIVE the service directly from the Internet using z/OS V1R2 SMP/E (also available as SMP/E for z/OS and OS/390 V3 R1). Of course, physical delivery of your order is an option for you if you can't take electronic delivery today. In addition, all orders larger than 1 gigabyte compressed will be shipped on the physical media of your choice, or not at all if you decide you'd rather re-submit your order to request less service. ►



IBM's strategy is to provide entitled service ordering and delivery capabilities for the z/OS and OS/390 platforms electronically only via the Internet, so now is a good time to try out this new feature. Go to the ShopzSeries Web site, register (if you haven't already done so), and try using ShopzSeries for your next service order.

Does this electronic delivery of service solution sound familiar to you? If it sounds a lot like SUF (Service Update Facility), it should! IBM is positioning ShopzSeries as the primary ordering and delivery method for software service on the z/OS and OS/390 platforms. In doing so, many of the options you were familiar with in SUF will start to become available in the Service option of ShopzSeries.

So, what about installing all this maintenance, you ask? If you were hoping that we did more for installation than just simplify the APPLY parameters to install recommended service, then you are in luck. We actually read surveys that you may have filled out regarding the aspect of installing service which you felt needed the most help. The overwhelming answer is probably no surprise -- simplify the processing of ACTION ++HOLDS. And we are doing just that by providing:

- Structured HOLDSYSTEM comments
- More granular ACTION REASONIDs
- Integrated HOLDDATA Reporting in SMP/E APPLY and ACCEPT commands

The new structured HOLDSYSTEM comments enable you to better assess the impact of PTFs. Are you affected? If so, how? What do you have to do to satisfy the HOLD condition? When does the condition have to be satisfied -- before you APPLY?,

before you IPL?, after you IPL? etc.? You should be able to answer these questions by reading the structured HOLDSYSTEM comments. We are also standardizing the text used in the structured comments, so that they will be easier to understand.

Additional HOLDSYSTEM REASONIDs are being added to focus attention on critical system HOLDS. In some cases new REASONIDs were created to isolate certain actions so that they can get special attention (e.g., DB2BINDs -- for PTFs that require a bind to be performed for a DB2 plan, or MULTSYS - for PTFs that require PTFs to be installed on other systems). In other cases, new REASONIDs were created to remove actions that are always performed after you've installed service (e.g., IPL - for PTFs that today have an ACTION HOLD to IPL with CLPA, or RESTART -- for PTFs that today have an ACTION HOLD to restart a subsystem. The new ENH REASONID was added to identify the introduction of new function in the service stream. The complete list of REASONIDs is documented in APAR II12867.

And finally, there are new SMP/E HOLDDATA Summary Reports. The ++HOLD information is in the context of the SMP/E APPLY/ACCEPT output, eliminating the need to manually LIST or query the actual HOLDDATA text. Options are provided to omit certain types of HOLDS to reduce the size of the output produced (e.g., suppress the inclusion of DOC HOLDS). This function is provided in z/OS V1R2 SMP/E (also available in SMP/E for z/OS and OS/390 V3 R1).

These enhancements and an improved format should help you reduce your maintenance and

installation planning effort and achieve improved system stability. Look for a staged roll out of structured HOLDDATA and the new REASONIDs over time. It will happen by product, and as new REASONIDs are agreed to. Go look here: <http://service.boulder.ibm.com/390holddata.html> for more information.

IBM recommends that customers have a maintenance strategy that keeps them current and protects against known defects that could impact availability. The more you regularly perform preventive maintenance, the more stable your systems will be. See zSeries Maintenance Suggestions to Help Improve Availability in a Parallel Sysplex Environment at: <http://www.ibm.com/servers/eserver/zseries/library/whitepapers/psos390maint.html>.

In order to make it easier for you to implement a preventive service strategy, we've simplified our recommended service strategy, improved the testing of service, improved the ordering and delivery of service and we're making service easier to receive, apply and maintain. ■

## zSeries . . . a key to tomorrow's e-business

(continued from front cover)



You, our worldwide customers, tell us that there are three fundamental requirements for the serious e-business infrastructure. Our zSeries strategy is built around what we heard:

First is Innovative Technology. We need to use innovative technology to enable you to support and manage your workloads, both new and traditional. Second is Application Flexibility. You need the freedom to build and deploy applications as your needs dictate, afforded by open standards. And, you tell us you need New Tools to simplify managing your e-business. The infrastructure may be heterogeneous and complex, but it must be seamlessly integrated, easy to manage.

We're proud to say that zSeries had a head start integrating innovative technologies to meet tomorrow's e-business needs. To do real e-business, you need flexible, scalable, continuously available systems -- that's what Parallel Sysplex technology has provided with zSeries for years.

The powerful combination of z900 servers and z/OS provide the ability to intelligently manage numerous operating system images executing on a single server, as a single compute resource, with dynamic workload management and dynamic resource balancing across logical partitions. z/OS can dynamically allocate processor cycles across multiple z/OS or Linux virtual servers, to ensure that the unpredictable demand of the e-business environment can be intelligently managed according to your business goals.

And we continue to drive innovative technologies into zSeries to stay at the forefront the industry. HIPERSOCKETS is a low latency TCP/IP network connection for virtual servers and LPARs, offering higher availability and security while eliminating network attachment costs. It eliminates the need to traverse an external network connection, thus freeing dependence on external adapters, cables, and other components.

Software algorithms alone cannot meet the demands of a high-throughput server that must process complex cryptographic operations needed in end-to-end session handshakes and digital signature processing. z/OS routes cryptographic requests to take best advantage of the strengths of each type of cryptographic coprocessor available on a zSeries. Applications, middleware, Web serving, directory serving and any other users of cryptography do not need to do anything special to benefit from hardware-assisted cryptography; it is done transparently by z/OS.

System-Managed Coupling Facility Structure Duplexing is a major contribution towards delivering a continuously available application environment.

In the event of a disaster, Capacity BackUp kicks in. New Capacity Backup enhancements ensure that once the disaster has passed and normality is restored, the zSeries returns to its previous configuration automatically.

With innovative technology, there must also be application flexibility. Clearly, open source technologies, like HTML TCP/IP, Java, XML and Linux, have changed the way applications are developed and sourced, and the skills that will be required, going forward. Tomorrow's environments will expect flexibility in terms of what you build, and flexibility in terms of where and how you deploy. Our investment in WebSphere is key here too!

Of course, Linux is a primary example of open source. You can use standard distributions of Linux from Red Hat®, Suse®, or TurboLinux® to consolidate costly distributed server farms onto virtual servers on a zSeries. This "server heist" scenario can reduce your total cost of ownership, enhance management and speed deployment of new departmental servers.

WebSphere Application Server permits the quick development of new applications using industry-standard object technology such as JAVA 2 or CORBA. The z/OS environment enables those new applications to receive the benefits of Parallel Sysplex scalability and availability transparently.

There is a growing shortage of IP addresses, which are needed by all new machines added to the Internet. IPv6 expands the IP address from 32 bits to 128 bits, enabling virtually unlimited, unique IP addresses. It is IBM's intent to enhance z/OS and zSeries to support IPv6 protocol concurrent with existing IPv4 networks.

Full function Public Key Infrastructure support will be built into z/OS, enabling customers to create and manage large numbers of digital certificates. Many banks, insurance companies and other large e-business

enterprises are demanding this large scale, full life-cycle capability for digital certificates.

Project eLiza is an IBM focus on providing a self-optimizing, self-configuring and self-healing e-business infrastructure that includes all of IBM's e-servers. z/OS will continue to integrate wizards and other items as part of project eLiza, to reduce skills needed to run advanced workloads on the premier mainframe operating system.

Let's think for a moment what the world could look like in five years. Hundreds of millions of people will be connected to the Web, via wireless and other devices, driving trillions of transactions and tremendous amounts of rich media, voice and video. The supporting infrastructure will be diverse, made up of appliances, far-flung branch servers, mainframes, systems hosted by service providers, and supported by petabytes of storage. According to analysts, the world will be short at least a million IT administrators. Similar to the early 1900's when people were projecting there would be a need for a 100 million telephone operators!

Well, like then, it has become increasingly clear that the way to simplify manageability in a real and concrete sense is to build systems and, eventually entire infrastructures, that can essentially manage themselves. Systems must be able to self-optimize, self-configure, self-heal and self-protect. Last April we introduced Project eLiza, and focused on investing billions of dollars in solving these problems. zSeries has been a major player in this effort. Going forward, we are investing in leveraging technolo-

gies, like logical partitioning, Intelligent Resource Director and Capacity Upgrade on Demand.

Tomorrow's IT environment will be made up of different kinds of workloads as well as different kinds of customers. The next generation e-business infrastructure -- fast, open, real-time, real-world -- is a heterogeneous mix of systems that must be seamlessly integrated and managed. It is going to be a dynamic, evolving entity and zSeries is a key part of it all. zSeries is right in the sweet spot -- focused on integration, growth, application and advanced technology! zSeries is poised to lead in the marketplace.

In this issue of Hot Topics, you'll find articles about how zSeries is participating in Project eLiza, as well as a number of articles about improvements we've made to make z/OS easier to use as we travel the road to eLiza. ■



# What's up PUTDOC?

BY BRENDA RAYNES

## PUTDOC tool for sending documentation files to IBM

### What is it?

The PUTDOC CLIST executes on your OS/390 and z/OS systems and automates some of the steps in sending documentation (dumps, traces, etc) to IBM via the Testcase server. The user supplies an input data set name (usually from the 3.4 panel within ISPF) and responds to a few prompts. The CLIST submits a batch job that runs locally and performs the steps necessary to send this data set in the desired format to the Testcase server.

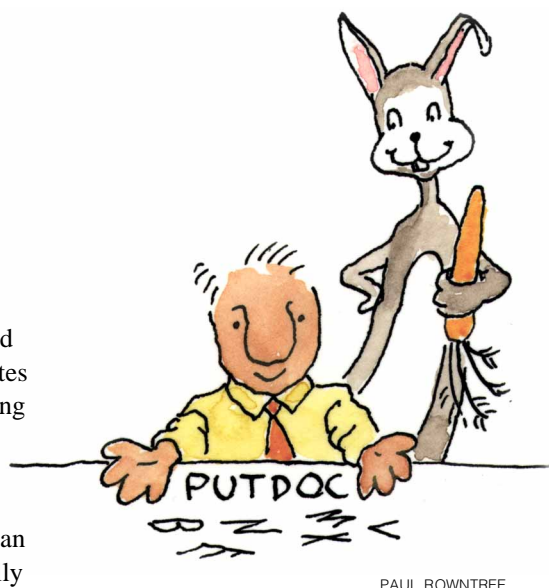
### How is it installed?

The instructions for downloading the CLIST are at:

<ftp://ftp.software.ibm.com/s390/mvs/tools/putdoc/putdoc.html>.

The user supplies customization information either within the CLIST or by using profile data sets. Often, the user makes about a half-dozen changes and the CLIST is ready for use.

Updates to the CLIST are placed on this server as a full-source replacement.



PAUL ROWNTREE

### What are its features?

In addition to its powerful customization tools, the CLIST greatly reduces errors in handling very small to very large data sets. It guides the user through recommended actions, manages space to minimize failures, retains information about destinations on the Testcase server and reduces the chance that items will be sent to the wrong destination. It supports sequential and partitioned (including a partial member list) data sets, and will copy a file from the HFS to send. Data sets may generally be sent in one of four formats: binary (no translation), text (translation to ASCII occurs if the destination is an ASCII host like Testcase), tersed (using TRSMAIN -- the file does not have to be tersed already, though it can be), or TSO XMIT (this is a file format only - all files are transmitted using FTP regardless of the destination).

Also, huge data sets are automatically tersed. If the size of any tersed data set (whether automatic, user-selected, or previously tersed) exceeds the user-specified SPLTSIZE value, it is split into parts before sending. The CLIST supports multi-volume (DASD) data sets and both z/OS and Unix-style directory structures.

### Where can I go for more information?

The PUTDOC HTML page listed above contains information about installing and using the CLIST. Once downloaded, the CLIST can be used to display extensive HELP text by issuing PUTDOC HELP or EX 'user.lib.clist (PUTDOC)' 'HELP'. The body of the CLIST contains complete customization instructions within the CUSTOM section. You may also send questions or comments to: [tcpdoc@us.ibm.com](mailto:tcpdoc@us.ibm.com) with PUTDOC in the subject text. PUTDOC is maintained regularly and your suggestions are always welcome. ■

# You've got print!

BY ALLIDA SHONING

Infoprint Server is not just for printing anymore! You can use Infoprint Server to send your print output from the JES spool to an e-mail address instead of to a printer. In fact, you'll be able to send print output to multiple e-mail addresses without creating separate output data sets on the JES spool.

This can be a great way to distribute documents electronically over the Internet and save on printing costs. When you need to distribute documents to multiple remote locations, you no longer need to know the TCP/IP addresses of the printers or the data format each printer accepts -- now all you need to know is the e-mail addresses of the intended recipients. And, you don't even need to print the documents. The recipients can view documents, decide for themselves whether or not to print the documents, and either print them on their own printers or save them for printing at a later time.

## Overview

The diagram on page 29 shows how Infoprint Server, together with Infoprint Server Transforms, processes output from different types of applications and prints or e-mails the output.

## Scenarios

Here are just a few possible e-mail scenarios that show how you can use Infoprint Server in your installation.

### Printing from CICS and IMS applications:

Your international manufacturing company wants to distribute inventory control reports created by its CICS and IMS applications to remote locations around the

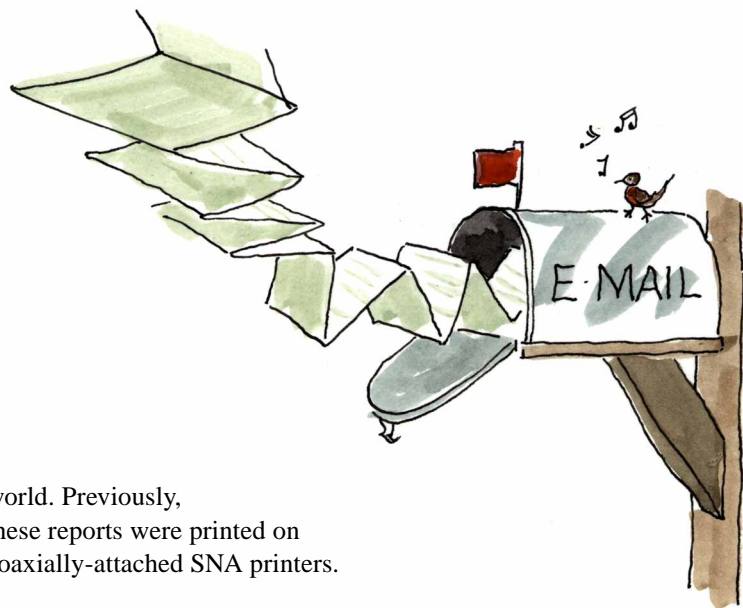
world. Previously, these reports were printed on coaxially-attached SNA printers.

Without making any changes to CICS or IMS applications, you can use the NetSpool and IP PrintWay components of Infoprint Server to convert SCS or 3270 input data produced by your VTAM applications to text data and then send the text data as an e-mail attachment to multiple recipients. At the same time, Infoprint Server can print the same data to a PSF-controlled AFP printer or a TCP/IP-attached ASCII printer. The e-mail recipients can use Windows Notepad to view the e-mail attachment. If one of the recipients wants to print the file, he can print directly from Notepad using a printer driver (such as a PostScript or AFP driver) to create the output format required by the printer.

### Printing from batch AFP applications:

Your financial institution wants to distribute monthly reports to its key executives throughout the United States. These reports were previously printed on a high-speed AFP printer. Then the reports were mailed individually to the executives.

With few or no JCL changes, you can use the Print Interface and IP PrintWay components of Infoprint



PAUL ROWNTREE

Server together with the AFP to PDF feature of Infoprint Server Transforms to convert AFP data produced by your batch applications to PDF format and then send the PDF file as an e-mail attachment to multiple recipients. The e-mail recipients can use Adobe Acrobat Reader to view the e-mail attachment. If one of the recipients wants to print the report, she can print directly from Adobe Acrobat Reader using a printer driver (such as a PostScript or AFP driver) to create the output format required by the printer.

## Highlights

Highlights of the new Infoprint Server e-mail function are:

- Infoprint Server sends each document as an e-mail attachment. If your applications create multiple documents in the same JES output group, Infoprint Server can, with some exceptions when performing a data transform, send these documents as attachments in the same e-mail.
- You can send data in any document format, including AFP (MO:DCA-P), text, and PDF

format. Infoprint Server automatically identifies the data format so that recipients can view documents with the appropriate viewer.

- Infoprint Server can transform input data from one data format to another format that is more suitable for viewing. For example, you might want to use these transforms with e-mail:
  - Transform traditional line data, SCS data, and 3270 data to text format. Text data can be viewed with a text editor such as Windows Notepad®.
  - Transform traditional line data, AFP (MO:DCA-P) data, SCS data, and 3270 data to PDF format. PDF data can be viewed with Adobe Acrobat Reader. The AFP to PDF transform converts AFP resources to PDF format and can include all fonts in the PDF file so that e-mail recipients can successfully print the PDF file just as it prints in your own location.
  - Transform PCL data, SAP OTF data, PostScript data, SCS data, and 3270 data to AFP format. AFP data can be viewed with the IBM AFP Viewer for Windows.
- Job submitters can specify the subject line of the e-mail in either the TITLE JCL parameter or the title-text Infoprint Server job attribute. For those situations in which the job submitter cannot specify the subject line, the administrator can specify a default subject line in the printer definition.
- When you e-mail VTAM application data (such as CICS or IMS data), you can send the data to one or more e-mail addresses and also print the data at the same time.

### How to customize Infoprint Server to use the e-mail function

You must order and customize the Infoprint Server element of OS/390 V2R8 through z/OS V1R2. In

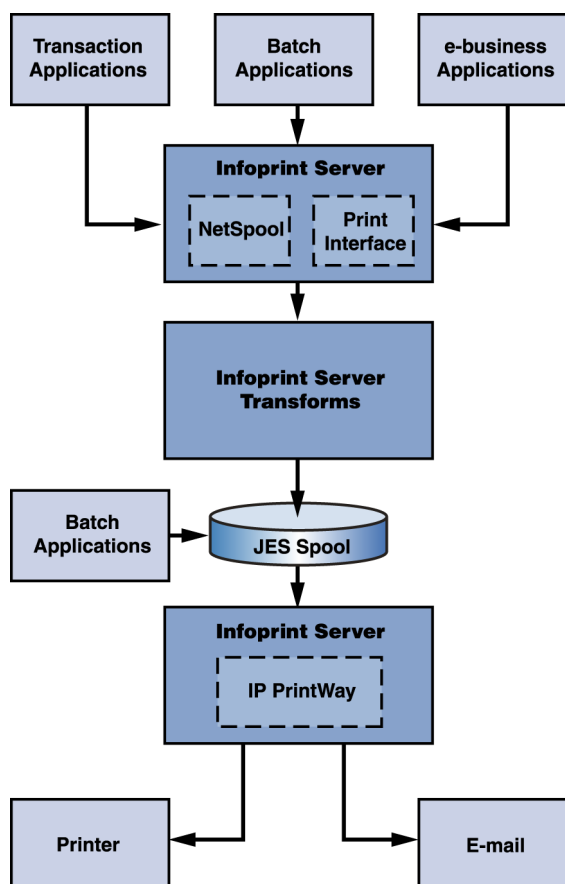
addition to the usual Infoprint Server customization, you must:

- Apply the Infoprint Server PTFs for APAR OW50406 and APAR OW48556. PTFs are available for OS/390 V2R8 through z/OS V1R2.
- Customize the IP PrintWay™ component of Infoprint® Server. To print from VTAM applications, also customize the NetSpool™ component. To submit jobs from remote locations or to transform data, also customize the Print Interface component. If you have already customized these components, no additional customization is required.
- Customize z/OS UNIX sendmail, a component of z/OS Communications Server.
- If you want to transform data, order and install the appropriate transform feature of Infoprint

Server Transforms, a separate licensed program (5697-F51). For example, to transform line data or AFP data to PDF format, you must order and install the AFP to PDF transform feature. The SAP to AFP, PostScript to AFP, and PCL to AFP transforms are free to customers of Infoprint Server.

### How to administer Infoprint Server to use the e-mail function

The Infoprint Server administrator must create a printer definition in the Infoprint Server Printer Inventory for each e-mail destination. The printer definition for an e-mail destination is very similar to the printer definition for a printer. You can use the same Infoprint Server ISPF panels as you currently use to easily create new printer definitions for e-mail





destinations. A new "E-mail Protocol" ISPF panel lets you enter a list of e-mail addresses up to 256 characters long.

If your address list is longer than 256 characters, you can define one or more alias names to sendmail and then specify that alias name in the printer definition. An alias represents a list of real e-mail addresses. You might want to define an alias name for long address lists or for any address list that you might want to specify in more than one printer definition. For example, you might want to define a sendmail alias for the address list for each department. Then you can create printer definitions that combine the alias names in different combinations.

If you want to send output to e-mail destinations in place of sending output to printers, you can simply modify the printer definitions for the printers, keeping the same printer definition names, DEST/CLASS/FORMS JCL selection criteria, and printer LU names. This means that users would not need to make changes when submitting a job. In some cases, you might want to replace several printer definitions (one per printer) with just one definition that contains a list of e-mail addresses. You can use Infoprint Server ISPF panels to modify printer definitions to make them work for e-mail. If you need to modify many printer definitions at the same time, you could use the Printer Inventory Definition Utility (PIDU).

If you e-mail documents created by VTAM® applications (such as CICS and IMS), and you want to print them at the same time, you can create a printer pool definition in the Printer Inventory. In the printer pool definition, list the printer definition for the e-mail destination and the printer definition for the printer.

## How to submit a job

In most cases, you can submit jobs just as you would if you were printing the output. To direct your output to an e-mail destination, you might need to modify these JCL or job attributes:

- If your administrator created a new printer definition for the e-mail destination, you must change the name of the printer definition in the FSSDATA JCL parameter, the DEST/CLASS/FORMS JCL parameters, or the printer's VTAM LU name.
- If you currently specify the IP address of the printer directly in the DEST=IP JCL parameter or in the printer-ip-address job attribute, you must now specify the name of the printer definition in the FSSDATA JCL parameter or specify the DEST/CLASS/FORMS JCL parameters associated with the printer definition. This is because the e-mail address must be specified in a printer definition.

To customize your e-mail, you might want to modify these JCL parameters or job attributes:

- You can specify the subject of the e-mail in the TITLE JCL parameter or title-text job attribute.
- You can specify the file name of the e-mail attachment in the DSNNAME JCL parameter.

You can submit a job in many different ways:

- You can e-mail output from z/OS batch applications. For example, if IP PrintWay selects output data sets in class P and the printer definition is named "executives" with a DEST selection value of

"EXECS", you could use either of the following sets of DD and OUTPUT JCL statements:

```
//OUT1  OUTPUT
      TITLE='XYZ Monthly
      Report ',FSSDATA=
      'printer=executives'

//DD1   DD   SYSOUT=P,
      OUTPUT= ( *.OUT1 ),
      DSNNAME=&&REPORT
```

**OR**

```
//OUT1  OUTPUT
      TITLE='XYZ Monthly
      Report ',DEST=EXECS

//DD1   DD   SYSOUT=P,
      OUTPUT=( *.OUT1 ),
      DSNNAME=&&REPORT
```

## Result:

The recipients listed in the printer definition will receive an e-mail with a subject line of "XYZ Monthly Report". The e-mail will contain an attachment named "REPORT.xxx" where xxx indicates the data format, for example "pdf" or "afp".

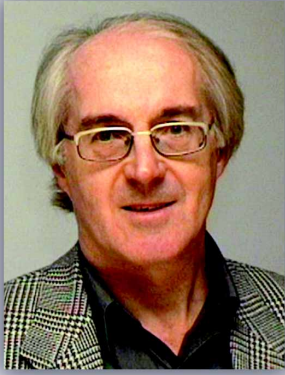
- You can e-mail output from VTAM applications, such as CICS and IMS.
- You can e-mail files from workstations that are TCP/IP-connected to your z/OS system.
- You can e-mail files from the z/OS UNIX command line. ■

## Where to find out more

You can find complete documentation on the e-mail function in the PTF for APAR OW48556, including information about how to change your current applications to use e-mail. In March, 2002, this information will be incorporated in the Infoprint Server publications.

## It's not easy to make things easy . . .

### Some comments from Tony Temple



TONY TEMPLE

*"The most compelling IT solutions are ones that are simple, natural to use, and completely in tune with users' needs and experiences. Achieving this requires building a multi-disciplinary team and involving users throughout the development process."*

-- Tony Temple,  
IBM Fellow and  
Vice President,  
Ease of Use

"It is vital to our future success that we deliver products that meet customers' expectations in terms of simplicity," Temple said. "This means the entire user experience -- everything the customer sees and touches related to the product!"

Temple and his team of developers from the IBM software lab in Austin are currently working on several "quantum leap" projects to improve the total user experience for IBM products and services.

**New expectations** - The need for simplification is partially the result of the change in user experience and expectations that have come with the evolution from PCs and desktop computing to a more Web-based world. "The Web is content-driven, not program-driven. There are no manuals, no help key. People just expect it to work," Temple says. "And the Web is dictating the need for the simplicity required by mobile devices. Fortunately, we have Web services emerging to help us handle this." To handle it from the developer's point of view, Temple believes the next step is to go beyond user-centered design to full-blown user engineering. With computing technology getting more complex by the day, the progress being made by Temple and his team will go a long way in making people's interactions with technology painless and natural.

"Users want to focus on performing their tasks," Temple said, "rather than taming the technology." Most of us think of ease-of-use as a simple workspace interface, or easy-to-navigate application. Temple and his team are tackling challenges at the core of e-business. Because IT customers don't have the skilled administrators or other resources to effectively manage increasingly complex systems, ease-of-use needs are top of mind in the IT industry. Toward that end is IBM Research's recent call for the industry to embrace autonomic computing, which involves computer systems and software that can self-regulate and self-manage basic IT functions. Providing easier to use, more consistent products will also help. And while there is a long way to go on both fronts, IBM is making progress.

**Processes, products** - One example is IBM's user-centered Design (UCD) process, which incorporates users' input into all phases of product development. This keeps the team in tune with what users want and need, and with how the design is measuring up. Three years ago, UCD became a core component of IBM's Integrated Product Development process -- a management system designed to optimize the development and delivery of products and offerings. In addition, UCD has been adopted by many IBM customers and the IT industry. "In fact, it is being used extensively by IBM Global Services, where it has become a critical part of many large bids," Temple said.

Temple acknowledges that developers need more than processes to improve ease of use during development -- they need tools. "Processes are fine, but developers prefer working with tools," he said. As a result, the UCD Workbench was introduced two years ago and has been broadly adopted within IBM. In addition, internal and external ease-of-use Web sites have been established that provide broad access to tools and techniques for developing highly usable products. "Many customers and universities are now using IBM's external site as their definitive source for ease of use," Temple said. ■

# DB2: Easier to use, easier to manage

BY BRYAN F. SMITH, JAMES RUDDY AND DAVID R. SCHWARTZ



DIANE ATTEBURY

DB2 for OS/390 and z/OS Version 7 in 2001 marks the eighteenth year of the DB2 product. That's almost two decades of new versions of DB2 with each one delivering additional function, performance, availability, and, especially, usability. In this article, we will explore the new usability features in DB2 Version 7 and the new IBM Data Management Tools that compliment DB2 in the area of ease-of-use.

Probably the single largest component contributing to ease-of-use in DB2 Version 7 is the DB2 Utilities component. Here is a list of the individual features that contribute to ease-of-use:

## LISTDEF and TEMPLATE support

When a database administrator manages hundreds or even thousands of objects, they could certainly use some assistance when trying to list and specify this list of objects for utility input. This is where the LISTDEF statement comes in. Instead of specifying that the following table spaces need copying:

```
COPY TABLESPACE TAU.CUSTOMERS
COPY TABLESPACE TAU.QUOTES
COPY TABLESPACE TAU.TRANSACTIONS
COPY TABLESPACE TAU.HISTORY
```

A list definition can be created which includes objects using wild cards and also excludes objects from the list as follows:

```
LISTDEF TAULIST INCLUDE
TABLESPACE TAU.*
EXCLUDE TABLESPACE TAU.*TEMP*
```

In this example, all table spaces in the TAU database will be included unless the tablespace name contains "TEMP." This definition can then be used in a utility, like COPY, as follows:

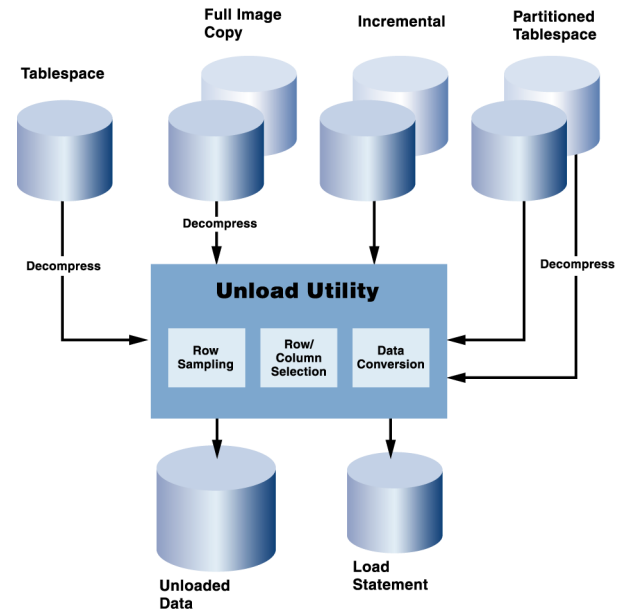
```
COPY LIST TAULIST
```

Because some utilities require datasets to be specifically named (e.g., the COPYDD datasets), the shorthand of using list definitions alone would not deliver a complete solution. Therefore, TEMPLATE support allows the specification of dataset names to be given with substitution values to provide uniqueness. Add to this dynamic allocation of these datasets, and you have a full solution simplifying the creation of and manageability of DB2 utilities.

## UNLOAD utility

A new DB2 UNLOAD utility provides the ability to perform the unload process from a table or an image copy. And, if the object is partitioned, the unload is performed in parallel using the utility subtasking componentry. This utility also enables the use of sampling of the data as well as data conversion (between EBCDIC, ASCII, and UNICODE). This utility enables the database professional to easily create test environments from production environments by sampling data from a production table's image copy and

preparing it for loading into a test environment. It even produces a DB2 LOAD statement suitable for loading the extracted data.



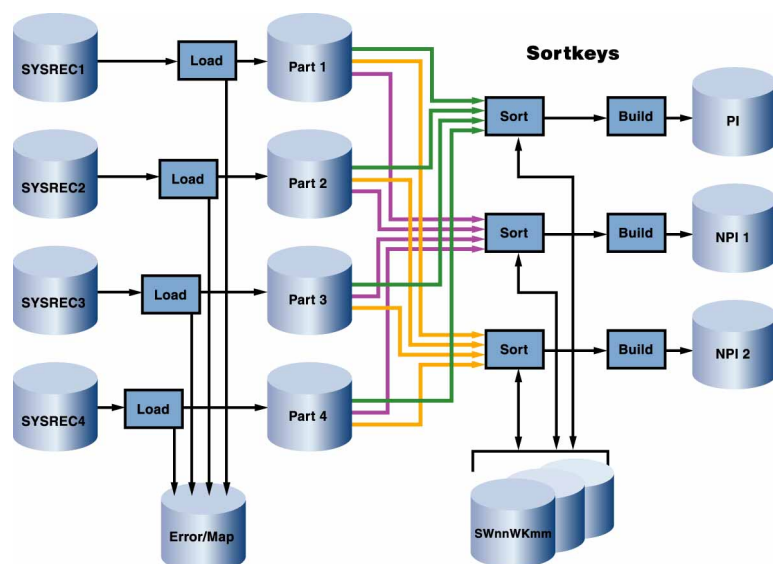
## LOAD partitions in parallel

Up until Version 7, if you wanted to load multiple partitions of a table in parallel, you had to create multiple jobs and then run them in parallel. Now, you can specify the multiple inputs for the load, and the utility will create subtasks to not only perform the load in parallel, but it will also take advantage of the fact that this is a single invocation of the utility and perform parallel sorts and index builds. This will be a huge time saver for DB2 DBAs.

## Online LOAD RESUME

Often, data needs to be added in bulk to an existing table. This is where LOAD RESUME is used -- it can be thought of as "LOAD APPEND." Also quite common is the need to allow access to this table while the data is being





loaded. The solution up to now has been to generate INSERT SQL statements to perform the append. This solution is less than desirable because some program logic typically had to be written and maintained to wrap the data with the INSERT SQL statement. Now, this can be processed directly by the LOAD utility.

### Statistics history

The RUNSTATS utility collects statistics on database objects and stores them in the DB2 Catalog. Some shops capture these statistics so that additional analysis can be performed over time. In Version 7, RUNSTATS will now keep this history, and where better to place them, than in a DB2 table. Also provided is a MODIFY STATISTICS utility to simplify the management of purging of old statistics.

### DSNUTILS stored procedure

The DB2 utilities have always been invoked from a batch job. Now, with the DSNUTILS stored procedure (shipped prior to Version 7), DB2 utilities can be invoked everywhere that SQL can be issued. This is done with the SQL statement, and looks like this:

```
CALL DSNUTILS(...)
```

## DB2 Control Center

The DB2 Control Center is a GUI that manages one or more DB2 systems across all hardware platforms and gives you the ability to create, alter, and drop database objects. Some significant enhancements were made to the DB2 Control Center (DB2 CC) to exploit DB2 Version 7. These include the following:

### • Run DB2 utilities

Via the stored procedure mentioned above, DB2 CC can execute DB2 utilities. This function is perfect for those cases where a single utility needs to be run on the fly. In the latest version of DB2 CC, utilities can also be restarted and the LISTDEF and TEMPLATE support (AKA wildcarding and dynamic allocation) is supported.

### • Generate object definitions

Sometimes, the source definition for an object is desirable to recreate. Through DB2 CC, you can generate the data definition language (DDL) SQL statement that you can then modify or execute on a different DB2 system.

### • Information center

The information center is a one-stop shop for access to reference

material, DB2 documentation, troubleshooting aids, and Web-related links.

The DB2 utilities aren't the only source of usability enhancements to DB2 Version 7. Here are some others:

### • Unions in views

While this item is simply an extension in the SQL function, its power comes in the ability to manage large amounts of data in unique ways. One technique in managing large amounts of data is to horizontally partition it across multiple tables. This provides the ability to add and remove data at the table level. The main problem with this technique is that the queries that access this data have to be sensitive to which data is in which partitions. With Version 7, a VIEW can be created which UNIONS together multiple tables, thus eliminating the need for the queries to understand the horizontal partitioning scheme across the multiple tables. See: <http://www.idug.org/member/journal/Sept01/article06.cfm> for more information on how Unions in views can be exploited.

### • Cross loader

The typical technique to move data from one table to another is as follows:

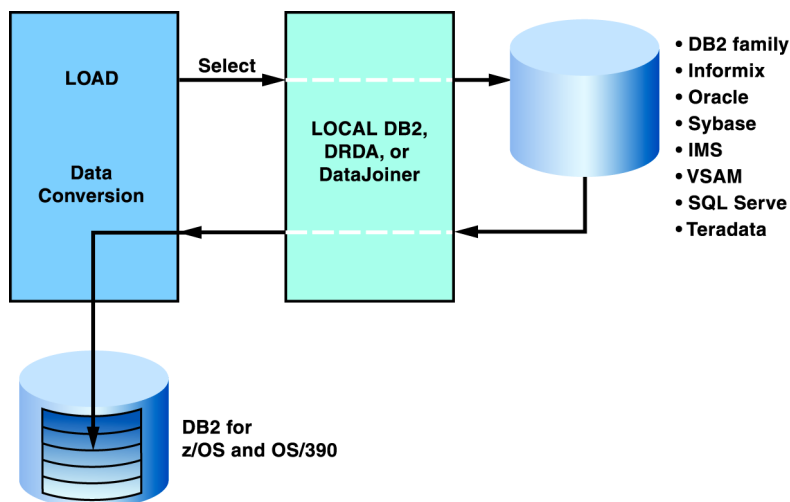
1. Unload the data
2. Move the data (if the source and target are separate)
3. Load the data

The LOAD utility in Version 7 allows these steps to be consolidated into one LOAD utility that has an SQL statement (cursor) as input to the LOAD. This has numerous benefits. It prevents intermediate disk reads and writes; if the data is not local or even in DB2, it can exploit the DRDA protocol which will handle all of the encoding issues related to

heterogeneous systems. It also allows the data to be handled in bulk (without logging), as opposed to single row based SQL INSERT.

### Migration from Version 5 or Version 7

The last area of ease-of-use that we will explore in Version 7 is the ability to migrate from Version 5 or from Version 6 to Version 7. Don't expect to see this function to be provided in the future, but if you do have some Version 5 systems now, you may want to consider this option to do this double-migration in one step. Be sure that you



understand that you are doing a double-migration and that you educate yourself properly on both Version 6 and Version 7 if you choose to skip Version 6.

### Data management tools

You may have heard about IBM's entering into the database tool market. Last year, the Data Management Tools group was formed. One of the primary missions of the DM Tools group charter was to deliver database tools to the zSeries platform that would result in a total cost of ownership benefit to our zSeries customers. Several of these tools make DB2 even easier to adminis-

ter. Here are a few of these tools that make DB2 easier to use:

- **DB2 administration tool**

This system administration tool provides an ISPF-based interface to perform DB2 object management. Through this one tool, navigation can be had through the database objects and other tools can be invoked for further processing or analysis. It also includes change management via alter and migrate functions and has the ability to reverse engineer the DB2 catalog. This is DM Tool's most popular tool.

- **DB2 automation tool**

Through monitoring and advanced coordination/execution capabilities, this tool can be educated on the environment and virtually take over the database operation activities. It can easily make any DBA more effective by removing the repetitive tasks in database management.

- **Recovery management**

There are several tools in this area that simplify and automate the recovery process. This is very important when data recovery needs to take place (when thorough planning may not be an option). For example, instead of having to recover an

object from the last image copy to some recent point in time, the DB2 Log Analysis Tool can surgically back out individual transactions. The other tools in this area address recovery of dropped objects, DB2 log optimization, and archiving DB2 data.

This is by no means a complete list of the DM Tools available -- it only attempts to highlight those tools which make DB2 easier to use. For more information on these DB2 Tools, go to: <http://www.ibm.com/software/data/db2imstools/>.

So, what can you expect to see in the future with respect to usability in DB2? Well, you may have heard about the "Self Managed And Resource Tuning" initiative for DB2 across all platforms. This "SMART" initiative is aimed at making DB2 more autonomic. While such an effort will take time to gain the confidence of system administrators before being able to perform such self-managing functions, we think the time is right for making databases less complex and easier to manage. Some examples of SMART features that DB2 (or DM Tools) may deliver someday include:

- Never having to specify primary or secondary quantities. With the goal of never running out of dataset extents, DB2 may automatically change the extent allocations as datasets grow.
- Recommendations on what statistics (via RUNSTATS) to collect based upon query workload.
- Altering schemas without forcing objects (or dependent objects) to be dropped and recreated.

In summary, DB2 Version 7 provides many usability enhancements, and when coupled with some of the IBM Data Management Tools, they make a powerful combination for DB2 administrators. ■



## Make IT Simple!



VIKKI HANAST

*“Make IT Simple is the directive that established the framework for much of our current design and development work in today's fast-paced, technology-driven business.”*

-- Vikki Hanast,  
z/OS Program Director,  
User Technology Solutions  
and z/OS EoU Champion

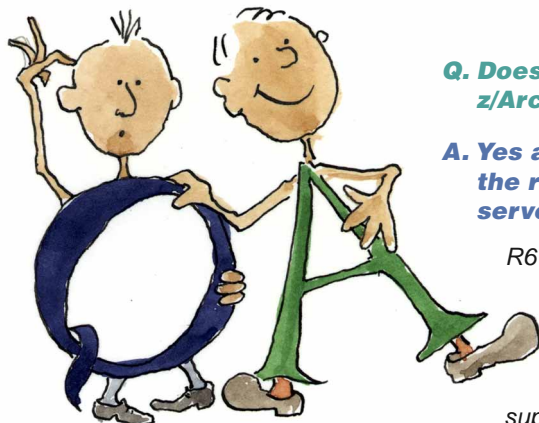
This is certainly the case in our z/OS software design business. Many years ago, industry designers looked at simple GUI interfaces as the key to improving and simplifying complex technical products. However, our industry soon came to realize that the look and feel was just one component in making IT easier to use. Getting to the heart of the problem, understanding key customer tasks and streamlining the design of products to match those tasks, is the true effort. Easier said than done. Making changes requires new paradigms, new expectations and, of course, new solutions.

Working directly with customers -- like many of you reading this newsletter -- is the key to our efforts to help drive changes in our z/OS product. Following a user-centered design model, the z/OS User Technologies team has been at the forefront of many of the ease-of-use changes taking place on our platform today. Improvements to our installation process a few years ago resulted in a wide array of task-guided, Web-based wizards. Today, we provide more integrated programmatic solutions via the Web or our msys product. Already, we are working hand-in-hand with our design peers across the Server division and our eLiza initiatives to drive ease-of-use into every aspect of our design and development processes.

I hope you find the information in this Hot Topics Newsletter informative and enlightening. Our team is always looking for customer input, ideas and suggestions, so please let us know how we can continue to make your IT solutions simpler and easier to use. Send me an e-mail at: [hanast@us.ibm.com](mailto:hanast@us.ibm.com). ■

# Q's and A's about OS/390 and z/OS migration and other kindred puzzlers

BY GREG DAYNES



PAUL ROWNTREE

We have provided maximum flexibility with migration options to both IBM zSeries servers and the z/OS operating system. With that flexibility, we've created operating systems that have different functionality depending on the processor they run on. Similarly, we've created a server that runs in different architecture modes, depending on the operating system that runs on it. Unfortunately, the flexibility also created a lot of confusion. Everywhere I travel, I get asked the same questions. In an effort to keep my travel to a minimum and save my voice, I've included many of the commonly asked questions here.

## **Q. Does OS/390 support z/Architecture?**

### **A. Yes and no, depending on the release and the server it is running on.**

R6 through R9 of OS/390 only support ESA/390 (31-bit), even when they are IPLed on an IBM zSeries server that supports z/Architecture (e.g., a z900 or z800). OS/390 R10, on the other hand, has the ability to run in either ESA/390 (31-bit) or z/Architecture (64-bit) mode when it is IPLed on either a z900 or z800 server. You have to make a conscious decision to IPL OS/390 R10 in z/Architecture mode. We've added a keyword in the LOADxx IPL PARMLIB member. It is called, ARCHLVL. The ARCHLVL keyword allows you to explicitly tell OS/390 R10, when it is IPLing on a z900 or z800 processor, whether it should prepare to run in 31-bit addressing (ESA/390) mode or 64-bit addressing (z/Architecture) mode. If ARCHLVL=1 is specified or defaulted to, OS/390 R10 will initialize itself to use the ESA/390 architecture, which supports only 31-bit real addresses. If ARCHLVL=2 is specified, OS/390 R10 will initialize itself to use the 64-bit real addressing capability of z/Architecture.

Please note that the ARCHLVL keyword should only be specified when you are using OS/390 R10 on a z900 or z800 server. Once you migrate to z/OS, you should

not specify ARCHLVL. z/OS will automatically default to the proper ARCHLVL based on the processor z/OS is IPLed on. If ARCHLVL is specified in z/OS R1, the value coded must be accurate for the processor z/OS is running on or you will receive an error message, an action message at the console, and experience known problems if you attempt to continue executing. With z/OS R2 and beyond, the system will enforce the appropriate architecture level based on the IPL processor.

All OS/390 (and z/OS) releases will run in ESA/390 (31-bit) mode when they are IPLed on either IBM S/390 Multiprise® 3000 or IBM S/390 Parallel Enterprise Server (G5 or G6) processors.

## **Q. Does OS/390 and z/OS software act differently when running on the G5/G6 than when running on z900s?**

### **A. All z/OS releases act differently when running on an ESA/390-architected processor than when they are IPLed in z/Architecture mode on a z900 (or z800) server.**

During the IPL process, z/OS detects the processor it is running on and defaults to (and as of z/OS R2 enforces) the proper architecture, either ESA/390 or z/Architecture. So on IBM S/390 Multiprise3000 or IBM S/390 Parallel Enterprise Server (G5 or G6) processors,



z/OS will run in ESA/390 (31-bit) mode and on IBM z900 and z800 servers, z/OS will run in z/Architecture mode. Furthermore, certain functions are only available when z/OS is IPLed on a z900 (or z800) server. For example, the new features such as 64-bit real support, Intelligent Resource Director, IBM License Manager (including Workload License Charges) and HiperSockets require an IBM z900 or z800 server. Other functions are available on ALL processors. These include:

- msys for Setup
- SNA Multisystem Console Support
- System-Managed CF Structure Duplexing (available on z900 servers in 4Q 2001 and on G5/G6 servers in the z/OS R2 time frame)
- Security
- msys for Operations enhancements

As I previously described, OS/390 R10 provides the ability to be IPLed in either z/Architecture mode or ESA/390 mode

It will use the new architecture. In that environment, 64-bit real addressing is supported.

OS/390 R6 through OS/390 R9 "act" the same on ALL processors. They ALWAYS are IPLed in ESA/390 (31-bit) mode.

**Q. Do I have to migrate through OS/390 R10 to get to z/OS V1 R1, R2 or later?**

**A. No, but you may want to.**

Since we've created operating systems that have different functionality depending on the processor they run on, and servers that run in different architecture modes, depending on the operating system that runs on it, you now have to consider many more factors as you develop your migration plans. In order for you to migrate, you may have to upgrade software (from OS/390 to z/OS), hardware (to a zSeries server), architecture (from S/390 to z/Architecture) and you'll ultimately change your terms and conditions -- from Parallel Sysplex License Charges

z800). You can migrate to an IBM z900 (or z800) server BEFORE you upgrade software levels. You are then able to utilize the increased capacity with your existing operating system. However, if you are not yet on OS/390 R10, then you will not be able to exploit the new z/Architecture. This implies that, unless you first migrate to OS/390 R10 when you migrate to z/OS (any release), you will be switching architectures as part of your software migration.

Similarly, if you are currently running an older release of OS/390 and want to take advantage of new software functions (at least the ones that are available on ESA/390 processors); or if you are currently running a release that will not be supported much, much longer; then you can migrate directly to z/OS (provided your existing software level can coexist with the release you are migrating to) BEFORE you upgrade processor levels. You are then able to exploit functions such as msys

OS/390 or z/OS Release	S/390 Parallel Enterprise Server G2-G4, PC Server S/390, RS/6000 with S/390 Server-on-Board, S/390 Integrated Server	S/390 Parallel Enterprise Server G5-G6, Multiprise 3000	zSeries Server (z900, z800)
OS/390 R8-R9	ESA/390	ESA/390	ESA/390
OS/390 R10	ESA/390	ESA/390	ESA/390 or z/Architecture
All z/OS Releases	Not Supported	ESA/390	z/Architecture

when IPLed on an IBM z900 or z800 server. When OS/390 is IPLed in ESA/390 mode, it acts the same on ALL processors. Only when OS/390 R10 is IPLed in z/Architecture mode (only available on an IBM z900 or z800 server), will it "act differently."

(PSLC) pricing to Workload License Charges (WLC) pricing. Therefore, there is no single migration path recommended for all customers. Each customer's scenario is different based on their current environment and their SW migration practices.

For example, you may be currently hardware-constrained and want to upgrade to a new zSeries server (e.g., z900 or

for Setup, SNA Multisystem Console Support (SMCS), msys for Operations, as well as Communication Server, security and configuration enhancements. This implies that when ►

you migrate to a z900 or z800 server, you will be switching architectures as part of your hardware migration.

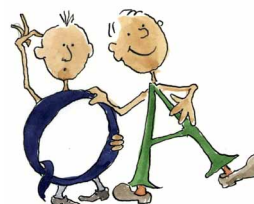
To avoid switching architectures at the same time as either a hardware or software migration, or to enable your existing supported OS/390 levels to coexist and share resources with the release you are migrating to, you can migrate through OS/390 R10. Going through OS/390 R10 is optional, but allows a staged migration and may be required for coexistence support. If you are migrating through OS/390 R10, you can first IPL in ESA/390 mode. When you are ready, you can then change architecture modes. Once you are running in z/Architecture mode in your test, production and disaster recovery sites, you can then migrate to z/OS. If you are considering this path, remember that OS/390 R10 will remain orderable in ServerPac, SystemPac and CBPDO until December 17, 2002 and that it will remain service-supported until September 30, 2004. You should also remember that we've announced that, starting with OS/390 R10 (or z/OS R1), the migration policy is the same as the coexistence policy (N+3). Therefore, once on OS/390 R10, you will need to prepare for a migration to z/OS V1 R4 (or earlier).

Please note that most risks associated with changing architectures will diminish over time, so whether you choose to switch architectures at the same time you upgrade hardware or software may depend on when you choose to migrate. No matter when you choose to

switch architectures, before you do, you need to:

1. Check the 2064 or 2066 PSP bucket (Upgrade 2064DEVICE or 2066DEVICE) for IBM maintenance needed for 64-bit addressing (or other hardware-related functions).
2. Check with your vendors to ensure that they support z/Architecture.
3. Verify that any locally developed code is not affected by the new architecture.
4. When you are ready to switch to z/Architecture, reconfigure the LPAR to use only central storage, rather than expanded storage.

The z/OS Planning for Installation publication (see Chapter 6, "Planning for z/OS on a z900 Server") provides detailed information on the various migration paths that are available and considerations that you will want to take into account in your migration planning. This publication is available on the Web at URL: <http://ibm.com/servers/eserver/zseries/zos/bkserv/>. ■



# Installing with ServerPac

BY WAYNE O'BRIEN, JOHN EELLS AND TERESA HOOD, Ph.D.

If you installed a z/OS ServerPac in the last year, you probably noticed a number of improvements in the dialog. While these changes have been accumulating gradually over several releases, the net result is a noticeable reduction in the time required to install your next z/OS order.

In the August issue of Hot Topics, ServerPac designer John Eells guided you through the new dialog functions and explained how to use them. This article tells you how we got there.

First, let's revisit the process of

**YOU ARE HERE**

installing an early OS/390 order. Even with its "warts," the early ServerPac (circa OS/390

Release 1) was an improvement over the PDO method of installation.

There was, however, this new dialog to learn. If you were accustomed to using CBIPO, you would have found ServerPac's dialog to be quite a bit different from the CBIPO panels.

There were other drawbacks, too. In the old ServerPac dialog, it was tricky to rename your target and DLIB data sets and assign them to volumes. Also, you spent quite a bit of time changing the high-level qualifiers of data sets, and, perhaps, removing all those secondary extents you didn't need.

Nor was there any provision for merging your order's data sets in the dialog.

And we haven't even mentioned logical volumes yet (we hope you don't need to use them anymore).

With the ever-increasing complexity of integrating large systems software, we realized that your job was getting harder, not easier. So we decided to reduce that complexity.

But where to begin? Why, with you, of course.

CPPPFLOW OPTION ➡ Installation		© IBM Corporation
Order	(MD053718)	The Following Functions MUST be Executed in Sequence
<b>C</b>	<b>Configure</b>	<b>Select Configuration for Installation and Merge</b>
*	Variables	Define Installation Variables
*	Zones	Define Zone Configuration
*	Modify	Modify System Layout
*	Alias	Define Alias to Catalog Relationships
*	SSA	Define SSA to Catalog Relationships
*	Installation	Select and Submit Installation Jobs
*	Save	Save Used Configuration
*	Update	Update Order Inventory Status
DI	Display	Display a List of Data Set Names
DT	Display	Display a Summary of Order Tables

We talked to many OS/390 customers about the challenges they face in installing ServerPac orders. They told us that creating and IPLing a new target system was taking up far too much time -- sometimes two to four weeks from start to finish.

With new releases of OS/390 (now z/OS) coming along every six months, we couldn't very well expect you to spend a month installing a ServerPac order. So, we decided to make ease-of-installation a primary focus for ease-of-use.

Based on a hypothetical OS/390 only ("vanilla") system, we



PAUL ROWNTREE

estimated that it would take a systems programmer at least two to four days to unload the ServerPac tapes and complete the dialog. Beyond that, we thought a minimum of five days would be required to submit the installation jobs, IPL the target system, and run the post-installation jobs and IVPs.

Identifying a problem is good; fixing it is better. To reduce the complexity of installing a ServerPac order, we brought in the experts.

Believing the dialog to be a primary candidate for usability improvements, we asked z/OS usability specialist, Teresa Hood, Ph.D., to analyze the dialog and make recommendations for improving its ease-of-use.

Teresa evaluated the dialog for those labor-intensive procedures where streamlining could save customers valuable time. She calculated the number of steps, or actual keystrokes, within a realistic scenario. As an example, she concluded that the various functions within the Install (I) option of the ServerPac dialog accounted for 98% of the dialog steps. Of these, the Modify System Layout function accounted for up to 60% of the steps.

Much of the "pain" of these labor-intensive sections involved using multiple panels to complete a single task, repetition involved in such tasks, and the tedium of manual processes. In looking at these two subsections of the Install option, Teresa found that excellent opportunities for streamlining the installation tasks could be realized through three fundamental changes in the dialog:

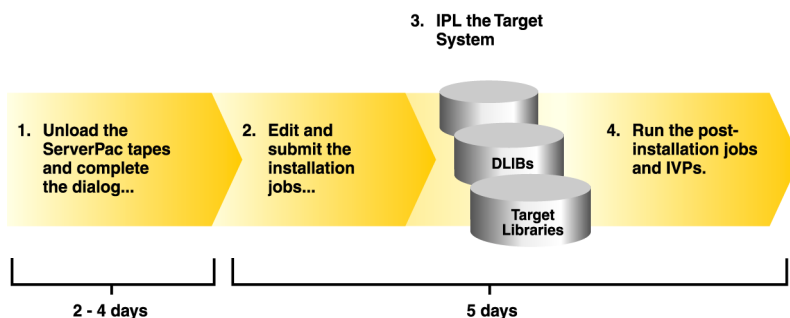
1. Allow the customer to operate on groups of objects
2. Automate as much of the installation process as possible
3. Consolidate actions onto one panel.

support these new data set types initially -- not until OS/390 Release 7. But even then, the dialog did not directly support SMS-managed data sets, so you had to control the allocation of these data sets through your ACS routines, based on data set types or a naming convention. Later, with OS/390 Release 9, the dialog added full support for SMS-managed data sets, along with support for non-SMS-managed PDSE and HFS data sets. Now, you can tell the dialog not to SMS-manage any data sets, or to SMS-manage most of them, without having to modify your ACS

*Dialog and ServerPac: Installing Your Order* (a sample of which is now available on the Web).

To reduce the "data set overload" associated with installing an order, we added (in OS/390 Release 6) the Merge command so that you could merge data sets of similar purpose, such as panel libraries, within the dialog.

Later, in z/OS Release 1, we added the new View and Change Facility so you could list your order's data sets in almost any way you might want to and modify them with the dialog's Change commands. (This function is also available in OS/390 Release 10 orders shipped after March 2001.) For example, when you migrate to a new release, you can use View and Change to display the LNKST-eligible data sets in your order so you can determine which data sets must be added to the PROGxx member, or so you can change all their secondary allocation amounts to zero with a single command. For more examples, see the article "What Happened to ServerPac for z/OS?" in the August 2001 issue of Hot Topics.

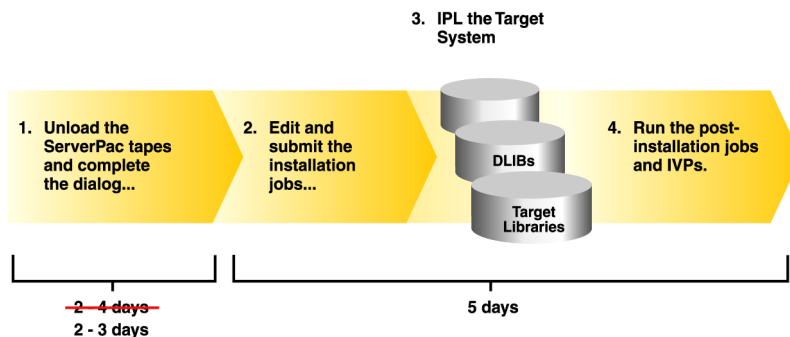


We asked the ServerPac Design Team -- some of them former MVS systems programmers -- to refine the dialog and reduce your opportunity for error.

To reduce the time needed to migrate to a new release, we added the Software Upgrade option, as of OS/390 Release 5. Provided that you follow IBM's recommended data set layout, Software Upgrade allows you to preserve your existing operational data sets when installing a new order. For some customers, Software Upgrade has proven to be an attractive alternative to performing a full system replacement.

We also enhanced the dialog to better accommodate SMS-managed environments. When PDSE and HFS data sets were introduced, these data set types had to be SMS-managed. The dialog did not

routines. (Want to SMS-manage all of your order's data sets? Watch this space.)



To reduce the number of "objects" involved in installing a ServerPac order, we did a number of things. To reduce the information overload, we consolidated our dialog-related publications, from four to two: *ServerPac: Using the Installation*

And now you can assign data sets directly to physical volumes through the CHANGE PVOL command without bothering to assign them to logical volumes first.

To really automate things, we added the Recommended System Layout option to the dialog in



z/OS R1 (it's in the Modify System Layout Options panel). This option will assign some or all of your order's target and DLIB data sets to volumes automatically. Teresa estimated that it used to take about 640 steps for a customer to assign 40 products to physical volumes and resolve over-allocations manually during Modify System Layout. The Recommended System Layout option reduced those 640 steps to 3 steps, for a substantial time savings. The Recommended System Layout option is described in the book, *ServerPac: Using the Installation Dialog*.

To further consolidate installation tasks, we've been steadily reducing the number of jobs in the installation jobstream, even while adding new jobs to help you do things that you had to do manually before. For example, the RACF jobs now show you all of the profiles needed to run the installation jobs and product IVPs.



worked together. WLM Development designed a "starter" policy -- with realistic sample values -- and put it in SAMPLIB. If z/OS Release 3 will be your first release with Goal Mode, ServerPac will load and activate the sample policy on your target system so that you have a starter policy you can display and modify.

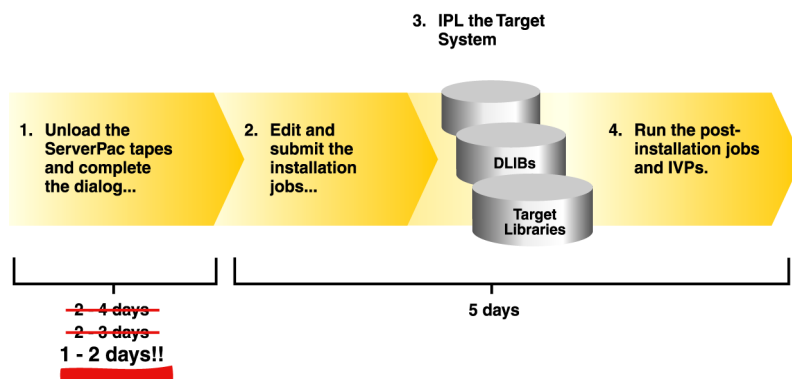
Also, we've tidied up the dialog's editing options a bit. Today when you use the dialog's Select line

Backup, to better reflect the function being performed, and now support Create so it will work as expected.

In z/OS Release 3, the dialog's View and Change facility will be expanded to allow you to display the names of any data sets in your order that must reside in the SMP/E SYSLIB concatenation (which can be handy for diagnosing SYSLIB problems).

And before we forget: In z/OS Release 3, the covers of the ServerPac publications will include the level of the dialog that comes with your order. For items in the software preventative service planning (PSP) bucket, you can use the dialog level to determine which PSP entries are applicable to your order and which can be ignored because they were fixed before your order was built.

With the new, easier dialog, we're confident that you can install your next order in only one to two weeks.



And we continue to work with you to be sure we remain on the right track. Coming in z/OS V1R3, ServerPac will help you with Workload Manager (WLM) Goal Mode. In previous releases, you had to create a WLM policy from scratch using the WLM defaults. ServerPac and WLM Development asked, "Why not make it easier for customers by giving them an existing policy to modify?" So we

command to work with a tailored installation job, the dialog places your TSO/E session in ISPF Edit mode for the job, but processes a few common ISPF commands in a counter-intuitive manner. For example, when you use the Create command from the Edit panel, the dialog creates a member in the backup data set, SCPPBENU. In z/OS Release 3, we're renaming the Create command on this panel to

### For more information about ServerPac, see ...

- "What Happened to ServerPac for z/OS?" Hot Topics August 2001
- *ServerPac: Using the Installation Dialog* (order number SA22-7815-02). Be sure to review this book often for the latest enhancements to the ServerPac dialog. We place a hardcopy of the book in the box with your tapes and also post a searchable version of the book on the z/OS Internet Library Web site: <http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>.
- *ServerPac: Installing Your Order* (on your order tapes). A sample of this book is now available on the Web! See: <http://www.ibm.com/servers/eserver/zseries/zos/installation/>. ■

# Setup to score with msys

BY UWE GRAMM



PAUL ROWNTREE

In the last issue of z/OS Hot Topics, Franz-Peter Boley described a new approach for customizing z/OS and products that run on z/OS. This technology -- z/OS Managed System Infrastructure for Setup (msys for Setup) -- is delivered as part of z/OS since z/OS V1R1.

As you know, z/OS is a very flexible platform for your workload. It offers administrators a wide range of possibilities to configure their system. However, this enormous flexibility can make z/OS systems complex and laborious to maintain. z/OS does not provide a consistent external representation of the configuration data. Instead, it relies on people to keep track of the configuration and to tie loose ends together. In the world of growing systems and sysplexes, this is a challenge to the expert and might overwhelm the

novice administrator. So the question is: What can msys for Setup do for you to reduce these problems? What is the focus of msys for Setup?

msys for Setup is part of a major ease-of-use initiative within IBM. Even the most powerful system will not make many friends if its setup and customization are too complex. Very experienced system programmers with highly specialized skills can do their jobs efficiently. But what does a new hire from the university think about a system that requires very extensive education and training to use?

The focus of msys for Setup is to help customers enable functions as quickly and easily as possible. For example z/OS is installed and running and a customer wants to configure functions such as sysplex, ISPF, etc.

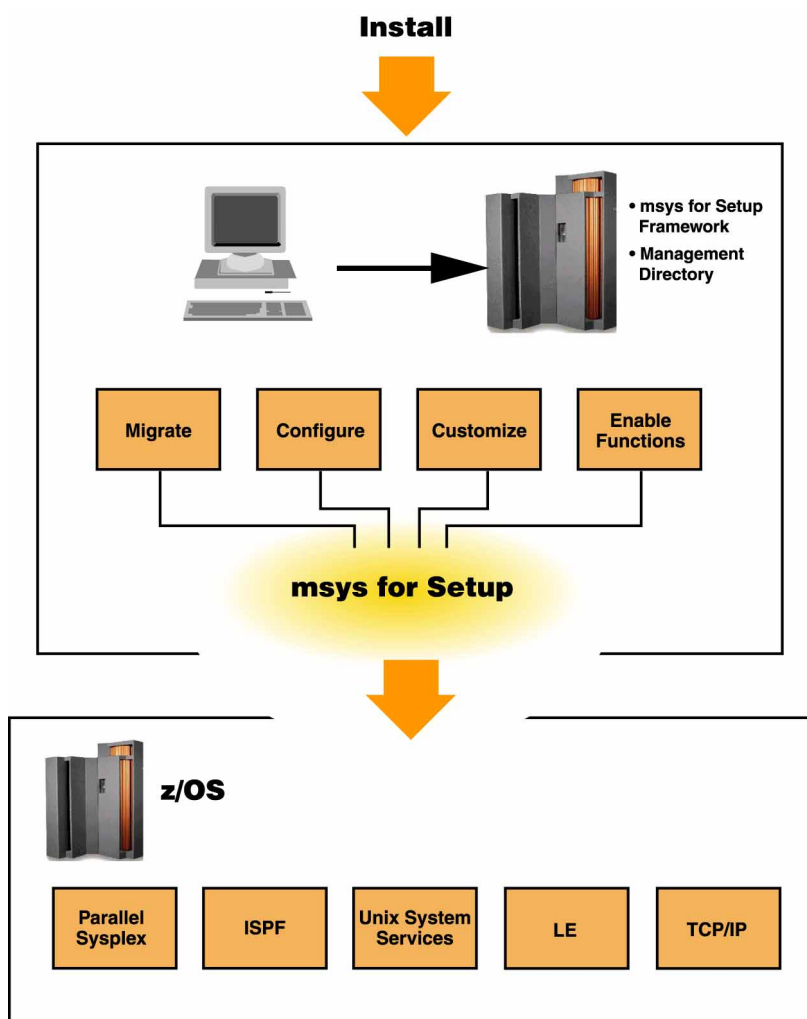
## msys for Setup is for customers who:

- Want to quickly set up new products
- Want to set up functions using IBM best practices
- Want to enable new or unfamiliar system features
- Prefer working with Windows-style GUIs
- Want task guidance
- Easily want to set up and maintain test systems

(See the figure on the next page.)

## Overview

In an almost ideal world, setup of a software product would consist of a single "Setup" button on a GUI, with no further human intervention. Or even better: a setup of a software product would come with default settings, once installed the system would automatically know it is there, and once it starts, it would dynamically change its settings based on performance policies. msys for Setup tries to get as close as possible to this ideal by automating all setup processes that do not require decisions by a system programmer and by deriving values when decisions by a human operator are required. msys for Setup uses wizard-like configuration dialogs that guide the user through a set of high-level questions. These configuration dialogs are part of the graphical user interface called the msys for Setup workplace. So you can work comfortably from your Windows NT® or Windows 2000 workstation. The configuration dialogs use defaults and best-practices-values wherever this is possible to dramatically cut down on the number of decisions that a user has to make. Because the customization process is now



handled by a program (instead of being a manual process), input is immediately checked for syntactical and semantic correctness. The right level of context-sensitive help is just a mouse-click away, eliminating the need to dig through piles of books to find information.

### Self-configuration through automatic updates

msys for Setup participates in Project eLiza by providing customers with self-configuration of their systems. Self-configuration sounds great, but what does this mean?

msys for Setup provides an automated process to automatically apply the configuration parameters that have been specified in the customization dialogs to the system. Self-configuration means that you can configure your system using the msys for Setup workplace without worrying about every parameter and how to implement it. However, if you are an experienced systems programmer and want to see exactly what msys for Setup is doing, you are still capable of previewing what will be done in the system. An extensive log is available containing all information about the update process and you can do a simulate update in order to see what will happen.

## z/OS Management Directory

The Management Directory is msys for Setup's central repository for configuration data of msys for Setup-enabled systems. It is based on the Lightweight Directory Access Protocol (LDAP) directory support that is available as a part of z/OS and on the Common Information Model (CIM) data schema. For msys for Setup functions and for management applications, the management directory provides a single interface to all management-related system data.

### Extending the value of msys for Setup

The value of msys for Setup increases as more components use it. With z/OS V1R2, the following components will use msys for Setup for their configuration:

#### Parallel Sysplex

Parallel Sysplex uses msys for Setup to cover additional tasks, such as the setup of the system logger environment, which includes the logger requirements for OPERLOG and LOGREC, as well as customizing the support of Enhanced Catalog Sharing.

#### Base sysplex

Beginning with z/OS V1R2, you can set up a base sysplex environment using msys for Setup. It has all functions of the Parallel Sysplex support relevant for base sysplex, including the support for migrating from a base sysplex to a Parallel Sysplex.

#### IP Services

IP Services exploits msys for Setup for defining basic IP settings, easily defining network devices and links, and setting up an FTP or Telnet 3270 server-based on standard defaults. ▶

**ISPF**

ISPF uses msys for Setup for creating the ISPF configuration table, keyword file and load module.

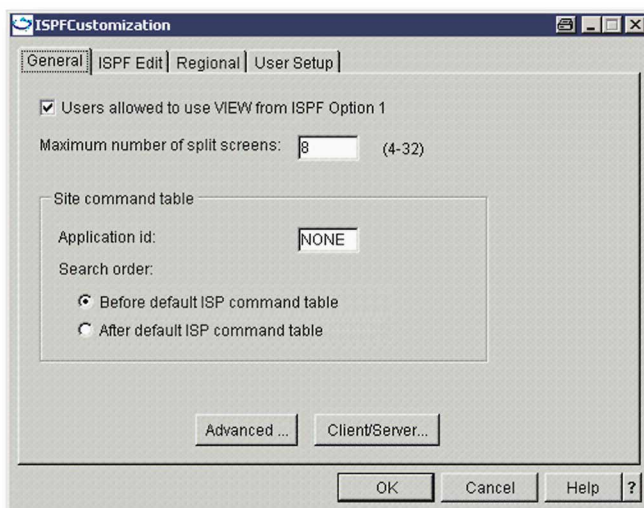
In z/OS V1R3, new exploiters for msys for Setup will be z/OS UNIX System Services and Language Environment (LE). You will be able to:

- Use msys for Setup to set limits on your UNIX system resources (such as the maximum number of user IDs that can be concurrent at one time and the maximum number of processes that the system will run at one time) as

and accompanying help text, which will then be put into production by the system programmer. In addition, msys for Setup will be used to create the region-wide run-time options for both CICS and IMS regions. Since the customization for these regions will now be done in a central location, keeping track of the region-wide options will be easier.

**Benefits**

z/OS msys for Setup provides a lot of benefits for all of the system administrators involved in working with z/OS. It can reduce your total



well as customize existing or new file systems. These settings will be stored in the z/OS UNIX parmlib member BPXPRMxx. When using this UNIX Systems Services exploitation of the msys for Setup element, the system will also do self-discovery and prime with the values that your system already has. You will also then be able to use msys for Setup property sheets to do any on-going customization of BPXPRMxx.

- Use msys for Setup to configure the default system-wide run-time options for Language Environment. msys for Setup builds the necessary configuration files, through an easy-to-use dialog

IT cost drastically. The wizard-like configuration dialogs make experienced system programmers much more efficient when setting up products. Thus, they can spend their time on the strategic tasks of their jobs. Routine tasks will be taken care of and there is one common management interface across all products. msys for Setup also reduces the training effort of system administrators by handling much of the complexity that is associated today with function enablement. And finding new hires with required skills will not be such a huge problem as it would be without using msys for Setup.

**Customers like it**

Customers who have seen z/OS msys for Setup so far are excited about this innovative technology. Lufthansa Systems participated in the msys for Setup R1 beta and tested a Parallel Sysplex setup based on configuration data stored in a LDAP server using a DB2 backend. They were impressed by the advanced technology and how easy the sysplex setup was with msys.

**Outlook**

More and more z/OS elements as well as IBM middleware products will deliver msys for Setup plug-ins in order to make function enabling on z/OS easier, more comfortable and more consistent. In addition, the msys for Setup framework will be permanently enhanced with new functionality, like multiple user support (i.e. more than one user at a time is able to work with msys for Setup on the same configuration), improved job progress information or valuable ease-of-use enhancements of the msys for Setup workplace. ■

**Additional information:**

For more information on z/OS msys for Setup, go to: <http://www.ibm.com/eserver/zseries/msys>.

If you are interested in a demo CD, send an e-mail with your name and mailing address to: Uwe Gramm at: [gramm@de.ibm.com](mailto:gramm@de.ibm.com).



# It's elementary! We're making information easier to find . . . and use!

BY PAUL GORGEN AND GEOFF SMITH



PAUL ROWNTREE

The z/OS team is following an information strategy that's dedicated to making our product easier to use. We want to make it easier for you to work with the system; we're doing that by making it easier to find the system information you need, when you need it, and making it easier to use that information to get your work done. We're making these improvements, to our retrievability and ease-of-use, in these key areas:

- Softcopy and the Internet
- User interfaces and wizards
- Content and consistency.

## Softcopy and the Internet

You've told us that finding the right information is your most difficult task, so we have several deliverables to make it easier for you to find and use the information you need. Here are some recent highlights:

- New zFavorites CD -- This credit card CD contains links to all the best zSeries Web sites. zFavorites contains links to everything z-related -- hardware, software,

documentation and support. These CDs are distributed as part of the Hot Topics Newsletter and are also separately orderable.

- LookAt for messages -- a major ease-of-use enhancement to our library. Now when you get a message on the screen, all you need to know is the release of the operating system you are running and the message ID. LookAt will find the message and open the appropriate message explanation for you. Recent LookAt enhancements include:
  - New z/OS V1R2 and zVM messages added to the LookAt Internet site. Our goal is to make LookAt your one-stop shopping place for all zSeries platform messages.
  - LookAt for Palm™ handhelds -- an application designed to test the waters, delivering product documentation via handheld devices.
  - LookAt Point and Shoot function -- from an ISPF session you can now point to a message, press a PF key and get the message explanation.
- An enhanced BookServer function that lets you use the power of BookServer search to locate the information you want, then click on the corresponding PDF button to download and print the book you want.
- An enhanced Softcopy Librarian written in JAVA that provides even easier management of your local softcopy repositories.
- We've added the most popular IBM Redbooks to the z/OS DVD collection.
- We're continually enhancing our Internet library (content, usability, performance, and availability).

Our strategy for documentation is simple: develop wizards and user interfaces wherever possible to help eliminate the need for standard documentation. Leverage BookManager® Softcopy for robust search capabilities across our library and provide PDF to make it easy to print hardcopy.

We know we're on a roll here, improving our information through softcopy and the Internet. Survey results tell us that more and more of you prefer getting your information in softcopy on CDs and the Web, instead of old-fashioned bound and printed hardcopy.

## Wizards and user interfaces

We're putting new information into interactive form, so you can get right to work without having to hit the books first. Wizards and msys make this possible. We've even retired some old books after putting their knowledge into interactive form.

### z/OS wizards

- Are interactive assistants that help with customization/configuration tasks.
- Ask questions about the task and custom-build output such as parmlib members, JCL, and task-specific steps to follow.
- Are Web-based, with no direct connection to the z/OS system. Your planning and configuration data stays on the client.

**New!** check out the new DFSMSrmm wizard and the updated and improved Installation Planning and UNIX System Services wizards. ▶

### Managed System Infrastructure for Setup (msys for Setup)

- Is our strategic direction for configuration tasks.
- Provides interactive configuration dialogs for system components.
- Input to msys takes direct effect on the z/OS system.
- We're adding msys support for different z/OS elements, starting with Parallel Sysplex.

### Content and consistency

We're overhauling our library to give all z/OS information a common look, with concepts,

procedures, and reference information clearly marked and easier to follow and use. Here's what we're doing in these areas:

#### Content restructuring

- Using content restructuring guidelines and templates for all significant new information and all information targeted for restructure.
- Using content restructuring guidelines and templates for all significant new media, including wizards and msys.

#### Terminology

- Using glossary guidelines and terminology procedures to

improve consistency in terms, definitions, and structure.

#### Style

- Using IBM Style as primary reference for writing conventions and style guidelines for technical documentation for customers.

In short, by going interactive, shifting our delivery to softcopy and the Internet, and giving everything a common look and feel, we're making z/OS information much easier for you to find and use. Read on through this edition of Hot Topics for more details. We think you'll agree -- z/OS has the right information strategy! ■

## The best kept information secret . . . the entire z/OS library and related IBM Redbooks on DVD!

BY SHIRLEY SWENSON

Did you know that we delivered our first-ever DVD library collection with z/OS Release 1 in March 2001? Remember that huge OS/390 Collection on **nine** CD-ROMs and the separate OS/390 PDF Library Collection on another CD or two? Well, we've fit all that and more on **one** DVD!



PAUL ROWNTREE

The z/OS DVD collection, descriptively titled *z/OS Version 1 Release x and Software Products DVD Collection*, includes the z/OS books for a single release (in both BookManager and PDF format), the z/OS software product books for multiple releases of supported products (in BookManager format and in PDF format, when available), and selected IBM zSeries Redbooks in PDF format. That's over 1740 unlicensed online books

for z/OS and over 205 z/OS-related software products! Also included on the DVD are a softcopy tools installation program, softcopy tools, and the collection index.

This comprehensive DVD collection is essentially the *z/OS Version 1 Release x Collection (SK3T-4269)* and the *z/OS Software Products Collection (SK3T-4270)* combined. Plus, we've included selected IBM zSeries Redbooks from the new

*IBM zSeries Redbooks Collection (SK3T-7876)*. All this is delivered on a single, higher-density DVD.

How can you get the DVD collection? Beginning in October 2001 with z/OS Release 2, the *z/OS V1Rx and Software Products DVD Collection (SK3T-4271)* is available as a subscription through a z/OS feature priced at US \$350. A subscription entitles you to receive quarterly updates to this collection as long as z/OS Version 1 can be ordered. You can also purchase an individual copy of the collection for US \$100 through normal publications ordering channels, such as the IBM Publications Center at: <http://www.ibm.com/shop/publications/order>. ■

# Voilà!

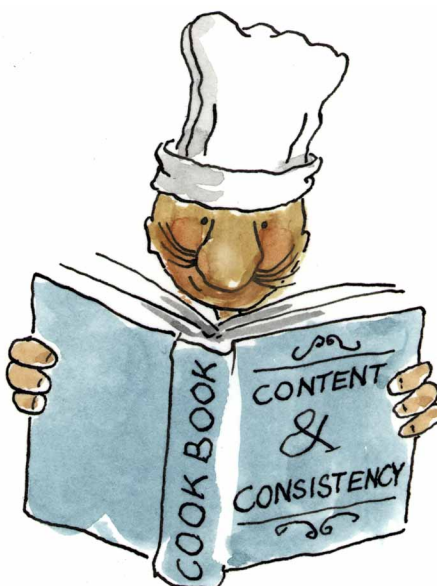
## Information content and consistency

BY IRIS MARON AND CHRIS HASTINGS

Have you noticed changes in the way we present z/OS information? Have you noticed that some z/OS books now have this statement in the “Summary of changes?”:

“Starting with z/OS V1R2, you may notice changes in the style and structure of some content in this book -- for example, headings that use uppercase for the first letter of initial words only, and procedures that have a different look and format. The changes are ongoing improvements to the consistency and retrievability of information in our books.”

If you've noticed, or are wondering why our books are changing their style and structure, it's because we're improving our documentation. Our surveys tell us you like the technical accuracy of our documentation, but you have trouble finding information and actually using it to do a task. To remedy these problems, IBM Information Development has set new goals to improve the usability and consistency of z/OS information. To improve the documentation, we're restructuring information, enforcing stylistic and editorial guidelines, and making technical terminology consistent. We've developed guidelines for writers to follow in making these improvements and have made these guidelines part of our z/OS writing process. Here are some details:



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### **We're restructuring new and existing information into a task-oriented form.**

Our focus is on audience and task analyses. We're providing step-by-step procedures and separating procedural information from conceptual and reference information. This improves the overall understandability and retrievability of our technical information.

To do the restructuring, we've also developed writing templates that all writers must follow for new information and major existing topics. The templates ensure technical topics are covered completely, and with a look and feel. This makes the information easier to read and understand. The templates also organize the information into modules, making it easier to find. We're applying the templates to all documentation formats (softcopy, hardcopy, wizards, and online help panels).

Some changes you'll see include:

- Procedures that resemble cookbook instructions. “Before you begin” sections tell what you need to have, know, and do before starting; steps are separated with horizontal lines (and will soon have large numbers); and procedures have completion statements, so you know when you're done.
- More examples to illustrate, clarify, and reinforce procedures, concepts, and reference facts.
- Headings that indicate the type of information that follows, such as “Overviews” for conceptual information, and “Steps for . . .” for procedures.
- Meaningful labels that identify smaller bits of information (like “Results,” “Tips,” “Guidelines,” “Recommendations,” and “Rules”) and that appear where you need them (such as with the related procedural step).

### **We're enforcing stylistic and editorial guidelines.**

We've developed IBM Style, which is the primary reference and official corporate standard for writing conventions and style guidelines for all IBM technical information. All writers must follow these guidelines for new and updated information. Some changes you may see are:

- Headings that use sentence-style capitalization (only the initial letter of the first word and proper nouns are uppercase). ▶

- Consistent use of highlighting devices such as bold for interface controls and italic to emphasize terms.
- Consistent use of abbreviations.

### **We're making technical terminology consistent.**

Writers are revising terms and definitions in their books to make them more consistent, and they're consolidating glossaries in z/OS books. We're preparing to merge z/OS terms and definitions into a centralized online termbase that will provide one-stop shopping for all z/OS terminology. The termbase will provide an easy way to access terms and definitions and will provide an official standard of usage. ■

Our goal is to provide you with consistent and easy-to-use information that will help you make productive use of our products and services.

To the right, is an example of a restructured procedure using the template for instructions. It includes an introduction, "Before you begin" section, ordered steps, "tips," and a completion statement. It also follows IBM Style guidelines. We have abbreviated the last few steps, but you should get the idea.

## **Setting up for rlogin**

You can use **rlogin** to log on to a z/OS UNIX system from a remote system. Two daemons are used when processing rlogin requests:

- The **inetd** daemon handles rlogin requests.
- The **rlogind** daemon is the server that validates the remote login request and checks the password. It does not have a customization file in the HFS.

The z/OS UNIX system does not use the `.rhosts` file that many UNIX systems use. It indicates the remote hosts and users who can access your system without specifying a password. A password is always required to rlogin to a z/OS UNIX System.

## **Steps for setting up for rlogin**

Perform the following steps to set up for rlogin:

1. Set up security for the `inetd` and `rlogind` daemons. See "Steps for preparing the security program for daemons" on page 376.
2. Establish the connection between TCP/IP and z/OS UNIX; see Chapter 30.
  - a. Add a `DATASETPREFIX` statement to the TCP/IP profile data set. This determines which `ETC.SERVICES` to use. If `/etc/services` has already been created, then that will be used instead.
  - b. Define port 513 in `ETC.SERVICES` or `/etc/services`, whichever is being used, by adding this line:
 

```
login 513/tcp
```
  - c. IPL or re-IPL if needed.
  - d. Start TCP/IP.
3. Customize `/etc/inetd.conf` . . .
4. Start the `inetd` daemon . . .

### **Tips:**

- You can obtain debugging information if you want. In order to do so, it is easiest to issue the command from a shell session and watch for the output messages. Issue:

```
/usr/sbin/inetd -d
```

- To verify that `inetd` is listening on port 513 . . .

When you are done, you can issue the `rlogin` command to log in from a remote UNIX system.



# IMS: Easing management for z/OS and OS/390

BY BARBARA KLEIN

IMS has announced a new version for 2002 to ease management in z/OS and OS/390 environments. IMS is IBM's premier Information Management System for z/OS and OS/390 environments, providing leading-edge technology through the IMS Transaction Manager and IMS Database Manager. Enhancements are being provided with IMS Version 8 for Information Integration, Manageability and System Scalability. Information Integration enhancements provide IMS customers the ability to transform the way they do business, build e-business applications that tolerate the rigors of doing business on the Web, leverage everything they learn in the process, and mine all information to make better decisions. Management enhancements ease installation, serviceability, information access and Sysplex management. Other enhancements help IMS customers run a scalable, safe, and easily manageable environment.

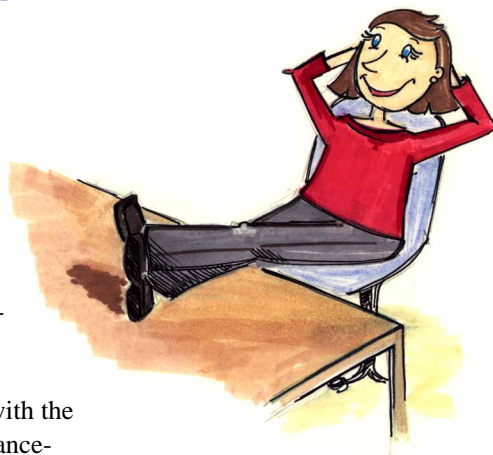
IMS has been providing data, message and network sharing with IMS V5, V6, and V7 across the Sysplex. To ease the management of these environments, customers have been asking for IMS to present a single system image, provide a single point of control across the Sysplex, and coordinate and manage change across the IMS Sysplex. VTAM Generic Resource users also need to be able to resume state on another IMS in the IMS Sysplex.

The IMS V8 Management enhancements, discussed here, include concurrent online change, single point of operations control, and terminal state management for operations ease. The IMS V8

Management enhancements also include a syntax checker for easier install, recovery management, packaging, distribution, and serviceability items. These are being provided in conjunction with the latest in z/OS release enhancements. These enhancements ease customer use of IMS for z/OS and OS/390 environments.

## Sysplex-Wide Resource Manager and Structured Call Interface

At the heart of IMS V8 and its Management enhancements are two products: the Sysplex-Wide Resource Manager and the Structured Call Interface. The Sysplex-Wide Resource Manager provides the coordination of online change across the IMS Sysplex and the global Management of IMS terminal resources. The Structured Call Interface provides the communication interface between the IMS address spaces on the same or across CPCs using the MVS Cross Coupling Facility (XCF). The Resource Manager maintains resource information for clients using a resource structure. It enhances availability by enabling a user to resume work on another IMS and to enforce single active users. It provides systems management by enforcing single user sign-on in the IMS Sysplex, if requested, and enabling name uniqueness enforcement for message destinations. The resource structure supports Automatic Altering and System-Managed Rebuild. It also supports Structure Copy, where the IMS Common Queue Server performs the rebuild to copy the contents from one resource structure to another.



TRACY BONDI

Resource structures could also be duplexed to keep from losing resources on the structure, should it fail, since these structure resources would not be checkpointed or logged.

## Coordinated Online Change

The Coordinated Online Change capability eases, manages, and automates global change across the IMS Sysplex. With coordinated online change, commands can be entered on one IMS, requesting that the new IMS Resource Manager coordinate an online change across all the IMSs in the IMS Sysplex, replacing the earlier manual coordination process.

## Single-Image Operations Manager

The Single-Image Operations Manager provides the framework for a single point of control for IMS, supporting IMS commands and responses and introducing some new IMS Sysplex commands. It provides an Application Programming Interface (API), which allows commands to be entered from a single point of control (SPOC) to one or more IMS systems and for consolidated command responses to be returned. This API allows a user or vendor ►

to write tools to automate IMS operations. It simplifies operations by supporting a single point of control, which presents a single system image for the IMS Sysplex and allows the user to enter commands to all IMSs in the IMS Sysplex from a single console. A single point of control application program is also provided to help manage a group of IMSs in an IMS Sysplex from a TSO SPOC. It issues commands to all the IMS subsystems in an IMS Sysplex, displays consolidated responses from these commands, and sends a message to an IMS terminal that is connected to any IMS in the IMS Sysplex. This would offer less complexity in managing multiple IMSs in a Sysplex environment.

### Sysplex Terminal Management

The Sysplex Terminal Management capability is provided to recover terminal state information after a session reconnect, and it allows the terminal user to log back onto another IMS after a failure. The Resource Manager is used to share VTAM terminal-related resources between IMS systems in the IMS Sysplex. IMS-managed VTAM Generic Resources affinity can be eliminated while maintaining terminal and user state data. IMS will maintain VTAM terminal and user state data if requested. IMS enforces resource type consistency for message destinations and enforces resource name uniqueness. IMS supports the global Callable Services for terminals and users, enabling user exits to obtain node and user information across the IMS Sysplex. The z/OS Version 1 Release 2 Communications Server Affinity enhancement can be used optionally with the Sysplex Terminal Management for enhanced usability.

### Syntax Checker

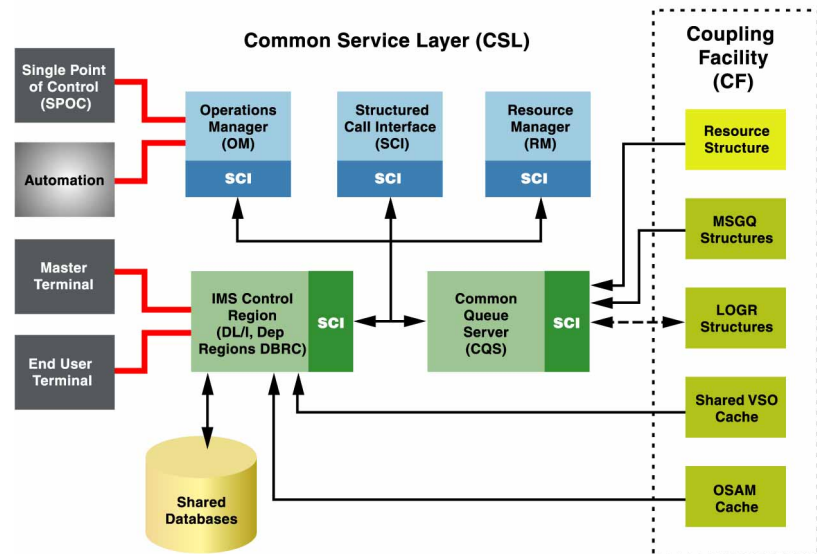
The Syntax Checker is a new addition to the IMS installation process. Syntax Checker helps reduce the system generation effort by assisting the system programmers in defining and maintaining selected input parameter members residing in the IMS PROCLIB. It provides parameter syntax checking, parameter value verification and detailed help text at the parameter level tailored to the IMS release. It also provides assistance in migrating to a new release by

the time-consuming process of tracking down and correcting parameter syntax or value errors.

### IMS/DB2 Coordinated Disaster Recovery Support

IMS/DB2 Coordinated Disaster Recovery Support extends the IMS Remote Site Recovery (RSR) function to provide support for coordinated IMS/DB2 disaster recovery by working with XRC (eXtended Remote Copy) for the DB2 logs. Without this support, if

### IMS Sysplex Management



identifying any new and/or obsolete parameters. Syntax Checker displays the proclib member in an ISPF panel. Any parameters or values in error are highlighted. The user may add, change or correct the value of the parameters. Detailed help text for a parameter is also available at the touch of a key. Using Syntax Checker, the system programmer can ensure that parameters are valid prior to shutting down and restarting IMS control regions. It eliminates the risk of parameter error during a startup of IMS and

IMS and DB2 logs log control information and (optionally) database data to a remote site by independent transfer mechanisms, the customer has to synchronize the IMS and DB2 logs and ensure that the IMS and DB2 databases are consistent when a disaster occurs. This can be a time-consuming and error-prone process that puts data integrity at risk. The new support enhances IMS RSR for coordination of IMS and DB2 disaster recovery processing at a remote recovery site, offering an IBM-

provided solution for synchronizing the logs. In the supported configuration, XRC is used for DB2 logs. With this support, the steps required by the user to synchronize the logs are greatly reduced.

### Batch Resource Recovery Service (RRS)

Batch Resource Recovery Service (RRS) support allows batch programs to use MQSeries with coordinated commit. It also provides for a full two phase commit for batch programs accessing DB2 as well as IMS DB, where today's Batch Attach from DB2 does not support coordinated commit. It allows work (capturing data and propagating it to another system (DB2)) to participate in the 2-phase syncpoint process along with the IMS work, thus making sure that all the work is done or not done as part of the same unit of recovery. This support is also being utilized by the new IMS DataPropagator V3R1 which provides asynchronous, near-real-time IMS-to-DB2 Propagation by taking advantage of the asynchronous messaging functions of the IBM MQSeries product. With this, operations and administration of asynchronous propagation is simplified, easier to use, and less error-prone. This near-real-time propagation would also offer improved performance and reliability, minimizing the impact on mission-critical IMS applications updating IMS DB data being propagated to DB2.

### Database Image Copy 2 enhancements

Database Image Copy 2 enhancements are provided to allow multiple database data sets to be copied in one utility execution. The utility passes the data sets to DFSMSdss on multiple DUMP commands to be processed in parallel. Optionally, the user can specify that the data sets are to be

processed by a single DFSMSdss DUMP command, which results in the image copies being written to the same output data set. Logical completion in most cases would be achieved for all of the database data sets in a very brief period of time. Also, the utility supports specification of a group name for the database data sets being copied. Logical completion is then indicated for the group rather than for the individual database data sets. With this, users are better able to manage and automate image copy processing.

### Database Recovery Control (DBRC) enhancements

Database Recovery Control (DBRC) enhancements are also provided for:

- Automatic Recon Loss Notification, which adds support to automatically propagate a Recovery Control (RECON) Data Set reconfiguration to other DBRC instances so that, when an error on a RECON data set results in a RECON reconfiguration on one IMS subsystem, other DBRC instances using the same RECONS are notified. The result is that all IMS subsystems automatically deallocate the failed RECON data set so that the user can quickly recover from the loss.
- If you eliminate abends when authorizing databases or recording Extended Error Queue Elements (E QEs), DBRC will no longer abend and be less likely to cause IMS to abend due to RECON record size problems. DBRC also would no longer abend when attempting to deallocate a database that is recorded in RECON as "already deallocated."
- RECON Command Authorization support allows users to control RECON access and updates via DBRC batch commands as well as the High Availability Large Database (HALDB) Partition

Definition Utility. User exit implementation allows user flexibility to customize security criteria and maintain an audit trail. This helps customers protect the integrity of database data by allowing finer control over the data one can access.

- 16M RECON Record Size helps users avoid problems caused by RECON records (such as the PRILOG record, which identifies the primary log for an active system) exceeding the VSAM RECORDSIZE maximum. This eliminates planned and unplanned outages that are due to RECON record size. DBRC implements its own RECON record spanning.
- Prilog Compression has been enhanced to reduce its overhead, improving performance. Since DBRC now supports RECON records of unlimited size, compression is attempted whenever an Online Log Data Set (OLDS) is archived.

### Additional management items

Additional management items are also being provided for packaging, distribution, delivery and servicing IMS:

- IMS Transaction Trace support takes advantage of the z/OS and OS/390 Transaction Trace Facility to ease serviceability by providing transaction tracing information.
- The installation of IMS Version 8 has been changed to conform to packaging standards of the z/OS and OS/390 platforms.

IBM is also providing a robust portfolio of IMS tools and utilities to help users manage and gain the best performance from IMS. To learn more about other functions and capabilities in IBM's IMS Version 8 and other IMS products and tools, visit the IMS Web site at: <http://www.ibm.com/ims>. ■



# All in the palm of your hand!

## There's BookServer . . .

### Easier navigation and handheld support

BY GEOFF SMITH

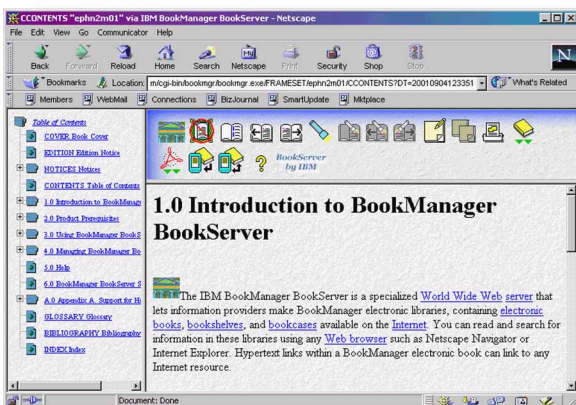
BookManager BookServer has just shipped V2.3, which supports two new functions:

- Enhanced Frames Support for Easy Navigation
- Web Clipping for Handhelds

#### Selectable Frames option provides improved navigation

With the new Frames icon, users can now choose to display a table of contents frame next to the contents of their BookManager book. This function lets you see the hierarchy of topics so you can more easily navigate to the information you are interested in most. The table of contents view is selectable via an icon at the top of the content pane. The table of contents expands and contracts dynamically and synchronizes with the contents of the document.

Here's a look at the new format:



#### Support for handheld devices

BookServer 2.3 has also been enhanced to provide better support for handhelds like Palm products and Pocket PCs. There are primarily two ways to connect to Web sites using a handheld:

• **Disconnected:** You can use a service like AvantGo, which takes snapshots of a Web site, formats them for the handheld, and downloads the content for off-line viewing.

• **Connected:** You can have a handheld that provides real-time access to the Web via connection with a wireless LAN card or a modem.

#### Using BookServer with AvantGo ("disconnected" method)

To use BookServer with a service like AvantGo, you can set up a "custom channel." Here's how:

1. If you haven't already done so, set up your Web-connected PC so that it can synchronize with your handheld.
2. Navigate to the IBM Book Server site that has the 2.3 code installed with Web clipping enabled. For this article, we will

use the following URL:  
<http://booksrv2.raleigh.ibm.com/cgi-bin/bookmgr/bookmgr.exe/handheld/BOOKS/ephn2m01/CONTENTS?SHELF=&DT=20010904123351#CONTENTS>

(Hint: If you open this document in Adobe® Acrobat®, the

above link will be live and you can click on it).

3. Now click on the icon that shows a handheld with a one-way arrow. This indicates a disconnected handheld device.
4. Once you click on the icon, a new window will open with

smaller icons and certain BookServer functions will be suppressed.

5. Highlight the URL in the browser window and do edit, then copy.
6. Next, go to the AvantGo site and log in to your account.
7. In the "My account" section, click on Edit Account.
8. Pick the "Create Custom Channel Wizard."
9. In the http field, paste the URL that you copied earlier. In this example it is: <http://booksrv2.raleigh.ibm.com/cgi-bin/bookmgr/bookmgr.exe/handheld/BOOKS/ephn2m01/CONTENTS?SHELF=&DT=20010904123351#CONTENTS>
10. Click the next button and fill in a meaningful title. In this example, we are clipping the BookServer 2.3 Getting Started, so fill that in and click Next.
11. Adjust the maximum size you want to allocate for this. For this example, we will choose the default (100K). Click Next.
12. On the "Follow Offsite Links Panel," pick no.
13. On the link depth panel, pick 1 and click Next.
14. When asked whether to include images, use your judgment. Most IBM manuals are mostly text, so choosing yes will probably have little impact and the book will display nicely with the navigation icons in place.

If you find that you did not capture enough of the book, you can always adjust the size or the link depth from the AvantGo Web site.

(continued on page 54)





## All in the palm of your hand! There's BookServer . . .

(Continued from page 52)

15. Now synchronize your handheld with the PC to add the channel. If things went well, the book should download and be ready to read off-line.

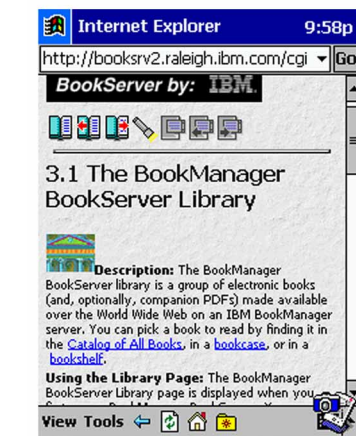
### Using BookServer with a connected handheld device

This situation is much simpler:

1. Turn on your handheld device. (For this article, the author was using Pocket PC with a wireless LAN card.)
2. Start your browser and enter the following URL:  
`http://booksrv2.raleigh.ibm.com/cgi-bin/bookmgr/bookmgr.exe/FRAMESET/ephn2m01/CCONTENTS?DT=20010904123351`
3. Wait while the initial BookServer panel loads. You screen should look similar to the following:



4. Next, click on the "Connected" icon (the icon that shows the handheld with a two-way arrow to the book). A new browser window will open up, looking like the following:



5. Notice that the connected view had icons for search. Try it. Click on the flashlight and submit a search for the term clipping.
6. The results window displays the hits as usual:



7. You can then pick one of the hits and use the other icons at the top of the screen to navigate through all the hits until you find the information you want.

### Summary

With these new functions, it becomes even easier to access IBM product information. By the time of this printing, the z/OS and OS/390 Library Web sites should be working with BookServer 2.3. The dynamic table of contents should help you navigate and find the information you need more quickly.

If you have a handheld, you can take IBM Information with you on your handheld device. Using the new BookServer Web clipping functions makes it even easier to access our information.

### Feedback

Please send any feedback on this article to Geoff Smith at: [gksmith@us.ibm.com](mailto:gksmith@us.ibm.com).

Thanks! ■

**Hey! Look us over,  
lend us your ear . . .**

**LOOKAT** takes this opportunity to toot its own horn and to thank you. Based on the latest statistics, LookAt now accesses over ½ million messages for OS/390, z/OS, VM, and VSE world-wide on the Internet. In addition, we have just learned that LookAt is now the 4th most popular OS/390 and z/OS site on the IBM Web! We couldn't have done it without you . . . Just wanted you to know. ■



## ... and LookAt too

(continued from page 53)

on the Web, if you need to jump to another section of the document, you can page forward, or jump to related information.

When this article was written, the IBM server that runs LookAt used BookServer 2.2, so you get the same BookServer icons you would get if you were browsing the site with a regular Web browser. The icons are rather large and you will need to scroll down past them to see your message explanation. However, V2.3 of BookServer includes special functioning



specifically designed to support handheld devices. If you see this icon to the left on the BookServer

navigation bar once the page loads, click on it.

The page you requested should be resent to you with smaller navigation icons, leaving more room for content.

## Installing LookAt for Palm VIIx

1. Make sure you have the Palm Desktop installed on your PC or Laptop.
2. Insert the zFavorites CD that accompanied this Hot Topics newsletter. You can also download the code from the LookAt FTP site: <ftp://ftp.software.ibm.com/ps/products/ibmreader/tools/lookat/PALM/lookat.pqa>.
3. Navigate to the Palm sub-directory and double-click on the file "lookat.pqa." This should bring up the Palm Install tool window, and you will see a screen similar to the screen shot to the right:

In the "Install Tool" window, click the Done button. The next time you synchronize, the LookAt application will be installed, and you will see the familiar LookAt icon on your device.

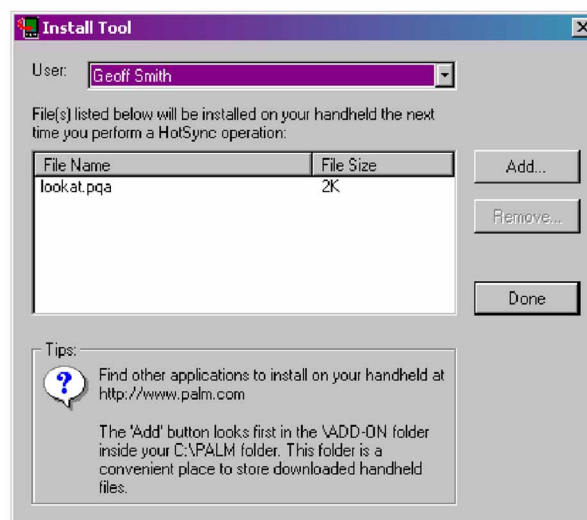
## Using LookAt for Palm VIIx

1. Raise the antenna on your handheld device.
2. Click on the LookAt icon.
3. An entry form screen will appear. Scroll down and select the operating system release you want to search on, then enter the message ID and tap on the Submit button.

Some sample messages for OS/390 V2R10 are BDT0999, FDBX0000, and EQA0320E. Remember, LookAt also accepts wild cards, though this could mean multiple hits. For help on using LookAt, see: <http://www.ibm.com/servers/s390/os390/bkserv/lookat/lookathelp.html>. ■

## Feedback

We admit that this application is a bit high on the geek-o-meter, but messages are chunks of discrete information that lend themselves well to this type of application. This application was really written as an exercise to see how practical it was to offer technical information via this channel. If you have opinions, suggestions for improvement, or other types of information you think would be usefully distributed in this way, please send an e-mail to Geoff Smith at: [gksmith@us.ibm.com](mailto:gksmith@us.ibm.com).





## We've got our ears on, good buddies, and we're listening to you!

### Your feedback on OS/390 and z/OS information

BY ADRIENNE BECKER



PAUL ROWNTREE

Our surveys are our "ears" and we are listening to you through your responses to questionnaires on the phone, at SHARE, and online. We've gathered a lot of feedback from these surveys and that feedback has helped drive us to deliver better and more usable product information and tools.

#### Yearly satisfaction survey

We conduct a survey every year to determine customer satisfaction with IBM software. The survey is administered by phone and a compilation of your responses is transmitted to various groups within the zSeries organization. The data and comments are then analyzed to determine what improvements can be made to increase your satisfaction. Follow-up calls are made to survey participants to clarify responses and collect additional information.

Several of the questions asked during this survey pertain to OS/390 and z/OS product information. One of the questions is, "When you need to access OS/390 or z/OS product

information, which of the four following delivery methods do you prefer: hardcopy (printed manuals), softcopy on CD-ROM or local repository, softcopy on the Internet or your company's intranet, or guided task assistance such as

wizards?" This year's survey results, reflecting 130 OS/390

customer responses, show that you continue to prefer to use the CD-ROM collections when looking for product information. (See Figure A)

As you can see from Figure A, use of hardcopy continues to decrease and use of the CD-ROMs continues to increase. These results are consistent with feedback received over the past two years and have helped drive the many improvements made to our CD-ROM offerings. (See "What you're telling us about softcopy, and what we're doing about it!" on page 60 of this newsletter, for details about softcopy improvements.)

We also want to know how satisfied you are with what we call our information "attributes," and so we also ask, "How satisfied are you with the following aspects of OS/390 or z/OS product information: technical accuracy, completeness, clarity (easy to understand), and the ability to readily find the information you need?" The results

from this year's survey reflect a mirror image of last year's results. (See Figure B)

While your satisfaction with all four information attributes is relatively close, one attribute continues to give you trouble: your ability to find the information you need (retrievability). Once you've found the information, it seems to provide you with the clarity, completeness, and accuracy you want.

To increase your satisfaction with retrievability, we've developed a series of functions and tools. For instance, we developed LookAt, a cross-platform tool that provides easy online retrieval of message explanations, system abends, and some codes. We've also added information wizards that provide only the information required to perform a specific task. Fourteen wizards have been delivered to date, another is currently under development, and three more are being considered for future development. We've also created zFavorites for zSeries, which is a credit-card-sized CD-ROM containing more than 70 links to Web sites that provide information relevant to the zSeries family of products (you'll find one of the zFavorites CD-ROMs included in this newsletter).

And, finally, we want to know what we can do to improve your satisfaction with our product information in general, so we ask, "What is the most important action IBM needs to take to improve your satisfaction with OS/390 or z/OS



product information?" This is an open-ended question and provides us with many interesting suggestions. The comments are considered individually and then categorized, as indicated in the chart on the next page. (See Figure C)

Your responses to the above question verify responses to the previous questions and support our strategy for OS/390 and z/OS product information and tools. Retrievability of online product information continues to be our main focus.

## SHARE surveys

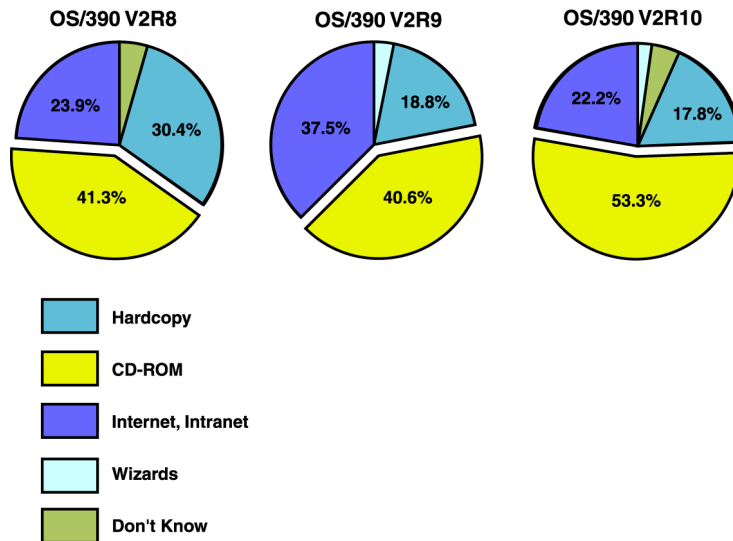
By the way, ever wonder why you can never get in or out of many IBM SHARE sessions without being handed a questionnaire to complete? That's because we like to ensure we get feedback from a cross-section of customers to support or contradict results from other surveys conducted over the year, and the best way to do this is to survey SHARE attendees. So, if you haven't been called to participate in the yearly satisfaction survey and feel your opinions are not being represented, here's your opportunity to be counted.

One of the questions on a questionnaire handed out at the July 2001 SHARE asked about product information access. Your responses to this question support results from our other surveys: you prefer to access OS/390 or z/OS product information using the CD-ROM collections. (See Figure D)

When asked why you prefer CD-ROMs, the answer given by most respondents (54.1%) was "convenience," followed by "speed" (29.7%). You also told us that

**Figure A**

## Preferred access method

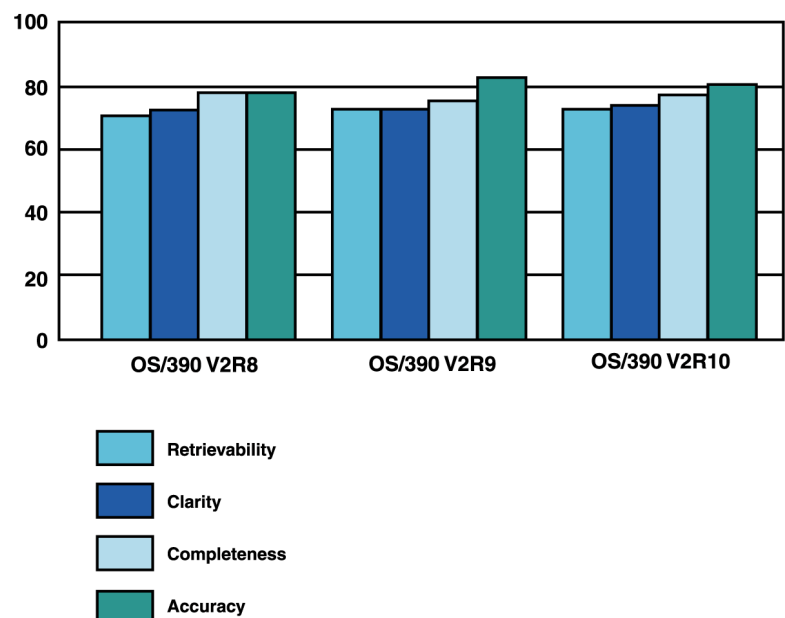


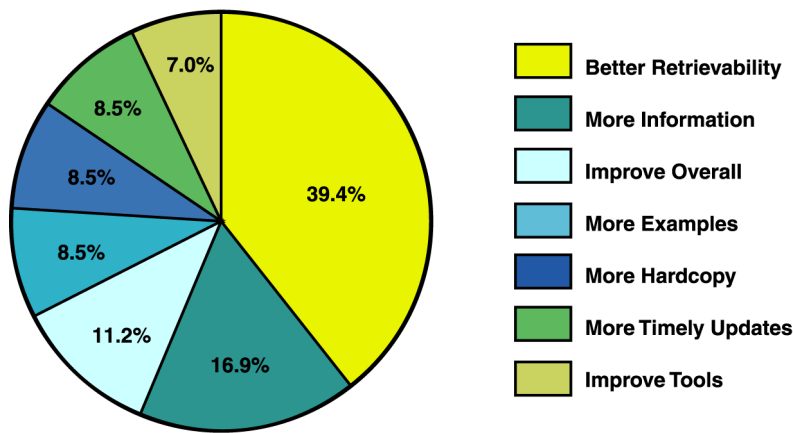
when you are not able to find what you are looking for on the OS/390 or z/OS Internet Libraries, you use the CD-ROMs as your alternate sources for finding information.

We have also learned from SHARE survey responses that you use different methods for accessing information, depending upon the task you are performing and where you are performing that task, and ►

**Figure B**

## Satisfaction with retrievability, clarity, completeness and accuracy



**Figure C****Actions required to improve satisfaction with z/OS or OS/390 product information**

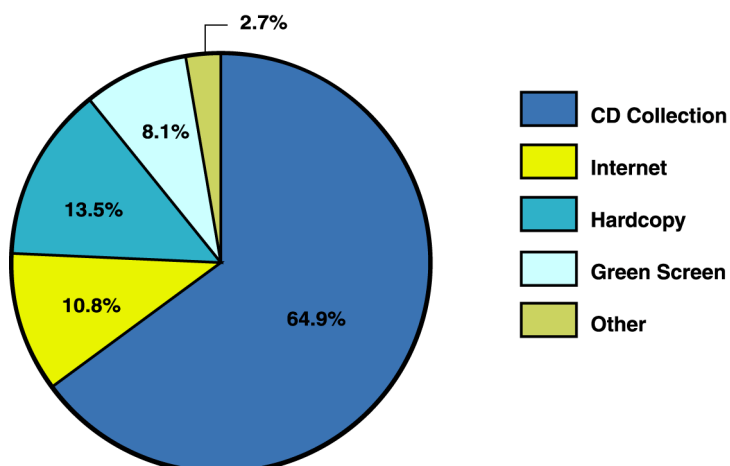
that many of you use a combination of access methods. The data collected from your responses on questionnaires completed at SHARE fill in the gaps of other surveys and provide us with a wealth of information. So please keep taking those surveys; your responses are important to us and we DO use the data.

**It's time to put the pedal to the metal**

As a result of analyzing all the feedback received over the past year, we are considering a number of actions. These include:

1. The creation of a z/OS Information Center
2. The integration of Redbooks into z/OS product information and tools
3. The addition of more and better examples within the product information. ■

We will continue to keep our ears on and listen to you via surveys and phone calls. In addition, we welcome your suggestions for improvement at any time. If you would like to let us know what else we can do to increase your satisfaction with OS/390 or z/OS product information, send your suggestions to Adrienne Becker at: [abecker@us.ibm.com](mailto:abecker@us.ibm.com). Thanks for all the feedback you've provided in the past, and we look forward to hearing from you in the future.

**Figure D****Preferred access method**

## Banana . . . fana . . . fofana . . . the z/OS name game



*Having trouble finding information about a particular z/OS element or feature? The problem could be that the element or feature has undergone a name change or has been withdrawn. So . . . next time you are searching for information and come up empty-handed, take a look at “zNames for zElements” on the zFavorites CD in this newsletter.*

*And if you want the whole skinny on all the elements and base features for z/OS V1R3, check out “z/OS Planning for Installation” (GA22-7504-4).*



# What you're telling us about softcopy, and what we're doing about it!

BY SHIRLEY SWENSON

Whether it's a comment on our yearly softcopy survey, an e-mail note about a CD collection, feedback from an IBM Web site, or a conversation at a user group meeting, everyone has something to say about softcopy. Well, yes, it's not always positive, but we are continually receiving feedback and assessing suggestions to improve softcopy and how it is delivered. Your voice is heard, so keep those notes coming!

## Yearly softcopy survey

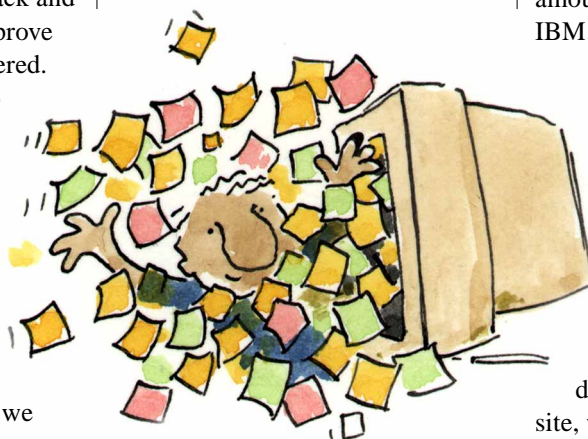
We received a whopping 334 responses to our 2001 IBM Softcopy Survey, which ended April 30, 2001! For the first time, we didn't include a hardcopy survey form with our CD collections, and most respondents took the survey online at <http://www.ibm.com/s390/softcopy/>. We kept the survey brief to encourage more feedback.

Here's some of the survey feedback that we received from our worldwide customers (yes, about half the feedback was from non-U.S. customers). Your feedback helps us to gauge your interest in changing technologies and tells us if you like what we currently deliver.

## Viewing and printing preferences

You told us that, in general, you are satisfied with IBM softcopy. Our goal, of course, is that you'll be very satisfied. Overall satisfaction with BookManager rated a mean score (average) of 1.93, and PDF rated a mean of 2.14 (that's on a scale of 1 to 5, where 1 is very

satisfied, 2 is satisfied, 3 is neutral, 4 is dissatisfied, and 5 is very dissatisfied). Printing remains the BookManager aspect with which users are least satisfied, and searching is the PDF aspect with which users are least satisfied. No single softcopy format meets all



PAUL ROWNTREE

your needs for the best searching, viewing, and printing.

Our z/OS information delivery strategy of providing books in both BookManager and PDF format is again confirmed by your preference for viewing online books and when printed copies of books are needed (see below).

**Question:**  
*My primary preference for viewing online books is:*  
(Check only one.)

**Results: see Figure A**

**Question:**  
*When you need printed copies of books, you would prefer:* (Check only one.)

**Results: see Figure B**

## Information delivery preferences and uses

You're probably wondering what's happening with hardcopy documentation. Our customers now prefer softcopy to hardcopy 3 to 1 (see next chart). In response, we have significantly decreased the amount of hardcopy delivered with IBM products.

**Question:**  
*When you need product information, which do you prefer:*  
(Check only one.)

**Results: see Figure C**

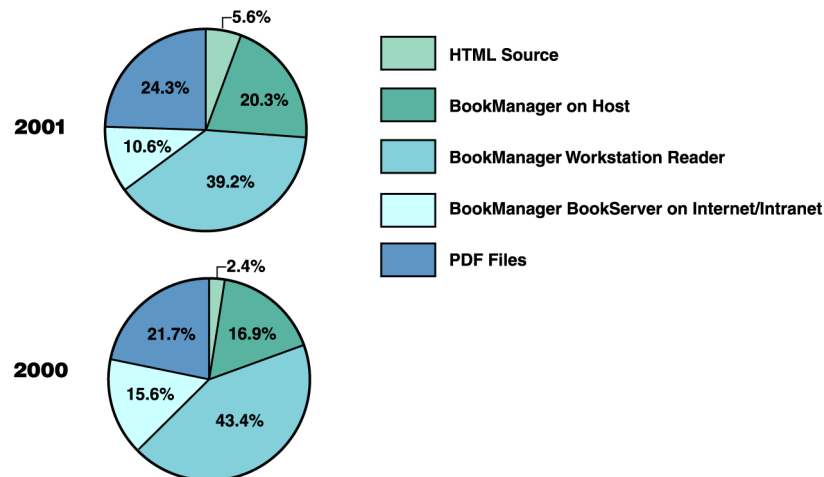
Because more customers than last year prefer softcopy delivered on an IBM Internet site, we're focusing on improving Internet delivery and retrieval. We've added additional searches for the entire Internet library. We've improved IBM BookManager BookServer, which serves and searches the BookManager books on the IBM Internet libraries, to provide direct access from a BookManager book to the comparable PDF file, if it exists, for printing. This allows you to use the high-quality search of BookManager and then easily print the associated PDF file.

You told us previously that you typically use more than one delivery medium, depending on where you're working and what you're doing. So, we continue to ask how important CDs are to you. 74% of our customers responded that they still want books delivered on CDs even though they can view and download them from



**Figure A**

**My primary preference for viewing online books is (Check only one):**



the Internet. From prior surveys, some reasons for continuing CD delivery are concerns about Internet availability, response time, and bandwidth. We also hear you loud and clear that CDs are very important for populating your intranets and transferring books to repositories: 61.8% of you populate intranets from CDs. Based on these responses, we will continue producing and shipping CDs with our products.

### Softcopy tools

One of the most prevalent requests we heard from customers during the last several years, both on the survey and in readers' comments, was for a collection index. Rightly so, you want to know what's on those many discs and want to be able to find information easily. We had always provided an online index along with the hardcopy collection booklet, but it seemed you couldn't find it because you asked for it again and again.

We did something about it. Beginning in September 2000, we introduced a new collection interface that includes a softcopy

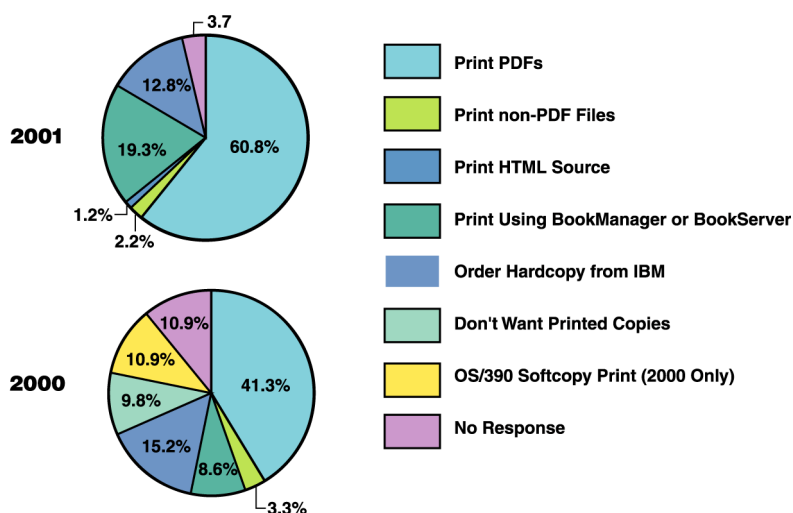
tools installation program on a separate tools disc in multi-disc collections, easy access to the online index from shortcuts on your computer, and streamlined packaging. Yes, the latter means that we stopped shipping the collection catalog booklet (index) in hardcopy with the CDs. This change was prompted by comments like "Upon receipt of each and every Online Library on CD-

ROM we promptly throw this document in the trash. Just put this document on one of the CDs for those who use it." We did just that, and users who want a printed copy can print the PDF version. We're also continuing to improve the collection interface and index based on your feedback. For instance, we started auto-launching the collection index from the discs containing books in June 2001. Now you can't miss the online index!

We heard many comments this year about IBM Softcopy Reader, which has replaced the IBM Library Readers. Our next big challenge is improving Softcopy Reader, and we've already begun. Java Runtime Environment is now on the tools disc. We've improved performance with Softcopy Reader (though maybe not as much as you would like), and you can now resize the bookshelf and book lists. So, we are listening. We've also established an Internet address ([bookmgr@us.ibm.com](mailto:bookmgr@us.ibm.com)) for comments on IBM Softcopy Reader and BookManager. ▶

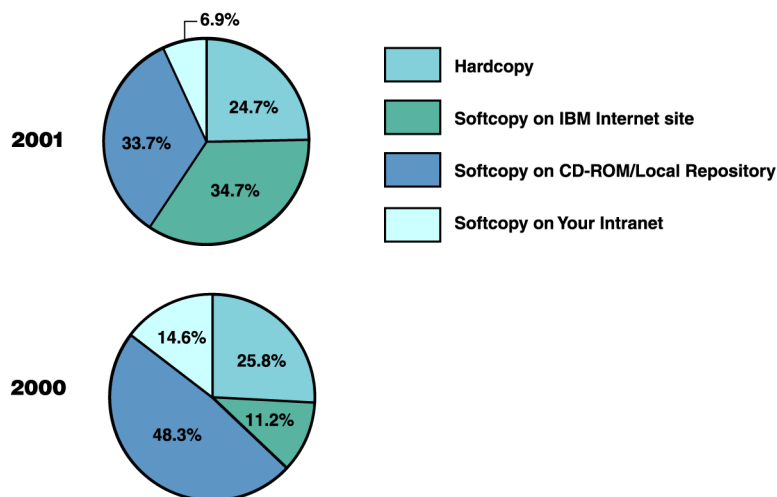
**Figure B**

**When you need printed copies of books, you would prefer (Check only one):**



**Figure C**

**When you need product information, which do you prefer (Check only one):**



### E-mail notes and readers' comments

Throughout the year we get your e-mail feedback and other readers' comments. Most comments are about the CD collections, the z/OS or OS/390 Internet libraries, or using BookManager products or Adobe Acrobat. Many comments include questions on using softcopy or how to order collections. Other comments alert us to errors in the collections, which we try to fix no later than the next quarter. We read and respond promptly to each and every reader's comment -- within four working days if possible, and often the same day!

#### Readers' comments in 2001

Through October 24, 2001, we answered 84 readers' comments and another 22 inquiries directly from customer calls or from IBM service and marketing personnel inquiring for customers. The most frequent readers' comments were on IBM Softcopy Reader (about 29 of them) and on softcopy tools and the collection interface (about 16).

Customers told us that they like Softcopy Reader's ability to filter the lists of bookshelves and books and the updated Windows interface. The top two concerns with Softcopy Reader, along with their resolution, are:

- **Improve performance** - faster with Pentium machine; implemented indexed bookshelf search (also known as "Quick Search") in Bookshelf Organizer, greatly improving search performance for large bookshelves with a corresponding search index

- **Change the font size** - corrected!

Here are other concerns and requirements voiced about Softcopy Reader:

- **Correct word- and line-wrap-ping problems** - fixed
- **Search not working as expected** - fixed
- **Data format problem using Bookshelf Organizer** - fixed
- **Want bookcase support** - open requirement
- **Want to open multiple bookshelves concurrently** - open requirement

- **Want Softcopy Reader for Linux platform** - the beta version available at: <http://booksrv2.raleigh.ibm.com/>.

- **Want keyboard accelerator keystrokes for scrolling through bookshelves and for cut and paste** - implementing accelerator keys for all functions that had them in Library Reader (work in progress, as of November 2001)

- **Want to save settings or have Softcopy Reader remember changed settings** - fixed

- **Improve printing** - added a button for printing a "range" of topics

#### Readers' comments in 2000

We responded to 72 readers' comments in the year 2000 and received an additional 36 inquiries directly from customer-related calls. The largest group of comments was about ordering collections (15 out of 72). Because this number dropped by almost two-thirds in 2001, our efforts to publicize the collections and the ordering procedure seem to have reached customers. We received only a few comments on the IBM Library Readers in 2000. One request -- for 32-bit support -- was delivered in IBM Softcopy Reader.

### Feedback from user group meetings

We really enjoy meeting you personally at meetings such as the z/OS Expo and SHARE, and we get a lot of satisfaction from hearing about your successes with softcopy and showing you what's new and improved. Sometimes we can even help you solve your problems on the spot. In exchange for filling out surveys, we often hand out copies of the latest collections.

So what do we hear at these user meetings that's different from survey or readers' comment feedback? Surveys conducted at

the Expo or SHARE are typically shorter than the yearly softcopy survey, not limited to softcopy questions, and we can include those questions that we're wrestling with at that exact moment.

### **Feedback from SHARE, August 1999, and the OS/390 Expo, October 1999**

For instance, at these user group meetings, we asked how you might want the large OS/390 Collection reorganized to better meet your needs and to deliver PDF files for OS/390 software product libraries. We also asked how many releases of OS/390 books you needed on the OS/390 Collection and whether you were interested in receiving the OS/390 Collection (nine CD-ROMs) on one DVD. We used your feedback to develop the softcopy collections for z/OS: The z/OS and z/OS software libraries are on separate CD collections, and each collection includes both the

BookManager and PDF formats, when available. We are providing only a single release of z/OS books on the z/OS VxRy Collection, and we decreased the number of releases shipped on the OS/390 Collection from four to two. We also began shipping all z/OS books, including the software product libraries and selected IBM Redbooks, on DVD (please see the article "The best-kept information secret . . ." on page 46).

### **Feedback from SHARE, July 2001**

This SHARE survey focused on the strategy for delivering information. Since the sample size was small -- only 38 responses -- we'll be distributing this survey to other customers. Here are the results:

- We asked if you are ready to move away from books to an article-based system. The answer was a resounding "NO." 84.2%

responded that is important to receive information in traditional book format. You clearly still want books and seem pleased with our dual BookManager and PDF softcopy strategy.

- When asked how you want your information delivered, you overwhelmingly preferred the CD collections (64.9% preferred CDs; 13.5%, hardcopy; and 10.8%, the Internet). You said that convenience and speed are the main reasons for your preference.

### **Using customer feedback**

We answer your softcopy questions, solve your problems, and deliver new and updated softcopy to meet your information needs.

We really appreciate your willingness to provide feedback! Keep those comments coming! ■

## **Softcopy collection updates in 2002 and 2003**

BY SHIRLEY SWENSON

### **OS/390 collection (SK2T-6700)**

*Updated twice in 2002 and 2003 (March and September), instead of quarterly. Automatic shipment of updates to OS/390 V2R9 customers ends after the March 2002 update.*

### **OS/390 V2R10 PDF library collection (SK2T-6718)**

*Updated twice in 2002 and 2003 (March and September), if needed. Automatic shipment of updates to OS/390 V2R10 customers continues.*

### **z/OS Security Server RACF collection (SK3T-4272)**

*Updated twice a year for new z/OS releases (generally March and September), beginning October 2001. No updates between releases.*

### **Messages and Codes collection (SK2T-2068)**

*Updated twice a year (March and September), beginning March 2002.*

All OS/390 books, including those for OS/390 V2R10 and related software products, are available on the OS/390 Internet library at: <http://www.ibm.com/servers/s390/os390/bkserv/>.

All z/OS books, including those for z/OS Release 3 and related software products, are available on the z/OS Internet library at: <http://www.ibm.com/servers/eserver/zseries/zos/bkserv/>. ■

## Our contributors

### Debbie Beatrice

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*Adrienne is a Software Engineer in the Mid-Hudson Valley User Technology Solutions (MHVUTS) group in Poughkeepsie, NY. In addition to being an information developer and planner, she is an active member of the MHVUTS Customer Information Team and is responsible for customer contact and feedback to increase customer satisfaction with z/OS and OS/390 information deliverables.*

### Greg Daynes

*Greg has been an IMS and MVS systems programmer for over 20 years. Currently, he is a Senior Technical Staff Member responsible for z/OS installation, packaging and delivery architecture. Greg regularly gives technical presentations at SHARE and EXPO, and participates in IBM Marketing calls for z/OS and OS/390 migrations, installation enhancements and software management.*

### John Eells

*John is a former MVS and OS/390 system programmer, now a Senior Software Engineer in IBM Software Delivery and Fulfillment. SDF delivers all of IBM's software and services packages, including ServerPac, CBPDO, ESO, and SUF. John's current assignments include ServerPac design.*

### Paul Gorgen

*Paul is a senior system-level ID planner for OS/390 and z/OS. He coordinated and delivered the system information for OS/390 releases 2, 6, and 10, and is currently coordinating delivery of z/OS release 3 information across the elements. In addition to system planning, Paul is a specialist in national language support and softcopy linking.*

### Uwe Gramm

*Uwe joined IBM in 1996 as a software engineer at the IBM zSeries Software Development lab located in Boeblingen, Germany. He was developer and service planner of MQSeries Workflow for OS/390 and WebSphere Application Server for z/OS. Uwe is currently working on the marketing and planning side for z/OS msys for Setup.*

### Chris Hastings

*Chris is a Senior Software Engineer at IBM in Poughkeepsie, NY. A veteran of many information development projects, Chris is currently a lead information architect for WebSphere for z/OS. He also participates in projects whose goals are to process and present technical information in advanced ways, such as with advanced online information centers.*

### Teresa Hood

*Teresa is currently the team lead for IBM's z/OS usability team. She has 15 years of experience with the user-centered design of interfaces and processes with IBM and Bell Communications Research. Teresa received her Ph.D. in Experimental Psychology from the University of London.*

### Barbara Klein

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### Iris Maron

*Iris is an Advisory Software Engineer at IBM in Poughkeepsie, NY. As the z/OS Information Development focal point for content and consistency, she has developed guidelines to improve consistency in content structure, style, and terminology, and is driving the implementation of these guidelines across z/OS and other IBM information providers. Iris is also the planner for the TSO/E element of z/OS.*

### Wayne O'Brien

*Wayne is an Advisory Software Engineer at IBM's Poughkeepsie Lab. Since joining IBM in 1988, Wayne has developed user assistance information for a variety of IBM software products. His current assignments include ServerPac usability and security wizard design.*

### Janice Peterson

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**Jim Porell**

*Jim is a Senior Technical Staff Member and Chief Architect for Middleware and Applications Deployment for the zSeries software brand. His focus areas include Systems Management, Unix System Services, Java, Directory, Security and Transaction Management services. Jim has been with IBM in the Hudson Valley for 21 years.*

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*Brenda is an Advisory Software Engineer with many years of experience in technical support and application development. Her background includes MVS systems build and support, CICS support, FTP support and development, and tools design and development for MVS and VM.*

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**Allida Shoning**

*Allida is the lead writer for the Infoprint Server element of z/OS. She has many years of experience at IBM and has worked in the Printing Systems Division as both a writer and programmer.*

**Bryan F. Smith**

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**Geoff Smith**

*Geoff is a senior level programmer, responsible for the technical documentation strategy (tools and technology) for z/OS Information. He is the tools team leader and team leader for LookAt, an initiative to improve information retrieval for z/OS reference information (messages codes commands). He has been with IBM for twenty years.*

**Don Spangler**

*Don is a User Centered Design specialist at IBM, Poughkeepsie, working in z/OS User Interface Design and Development. He completed a Ph.D. in Human Factors Psychology in 1999, with backgrounds in Experimental-Cognitive Psychology and Computer Science. Since joining IBM, he has conducted UCD activities on a broad range of projects from Web design to systems management.*

**James F. Steipp**

*Jim is an Advisory Software Engineer who has worked for IBM information development as a writer, planner, manager, Webmaster, and Wizard over the past 31 years. During that time he has worked on a myriad of projects and has helped develop and teach various courses. He currently divides his time among the Service Update Facility (SUF), the SoftCopy Librarian (SCL), and LookAt, with a little Web page development and z/OS wizardry thrown in for good measure.*

**Shirley Swenson**

*Shirley is an advisory software engineer with twenty-one years of experience writing, managing, and planning large systems software and hardware information. She is currently the team leader and planner for the IBM Poughkeepsie Softcopy Center, focusing on customer delivery and feedback.*

**Raimund Thielker**

*Raimund has spent the last 5 years focusing on automated operations of z/OS. He was responsible for the product design of System Automation for OS/390 Processor Operations and lead the Boeblingen lab development team for z/OS V1R2 msys for Operations. He is currently responsible for @server system automation.*

**John Urbanic**

*John is an Advisory Software Engineer in the z/OS organization. Although John can not take credit for creating the Internet, he did write one of IBM's first softcopy-only Web books in 1992.*

**Joseph Winkelbauer**

*Joseph has been with IBM for 17 years and is currently a Programmer Consultant in @server Design and Strategy. ■*

## Hot Topics article index by issue

To help you more easily find articles that interest you, we provide the following topical index for the first four editions of the Hot Topics Newsletter. Below is a short summary of the contents of each of the four issues. Note that each issue contains a number of articles about a single topic as well as articles about individual topics. Editions 2, 3, and 4 also contain a supplement in which we deal with a single topic in greater depth.

### **OS/390 Hot Topics (August 1999), GA22-7431-00**

Area of concentration: Language Environment and migration (8 articles)

Other topics: 10 articles

Total pages: 16

### **OS/390 Hot Topics (February 2000), GA22-7431-01**

Area of concentration: TCP/IP (9 articles)

Other topics: 7 articles

Total pages: 32

### **Hot Topics Supplement (February 2000)**

Topic: "UNIX on OS/390: A Powerful Blend"

Total pages: 16

### **OS/390 Hot Topics (August 2000), GA22-7431-02**

Area of concentration: Dynamic Workload Balancing and Resource Management (16 articles)

Other topics: 12 articles

Total pages: 60

### **Hot Topics Supplement (August 2000)**

Topic: "What the Heck is Parallel Sysplex Clustering Technology Anyway?"

Number of articles: 12

Total pages: 52

### **z/OS Hot Topics (February 2001), GA22-7501-00**

Area of concentration: z/OS's new technologies

(Intelligent Resource Director, etc.)

Number of articles: 21

Total pages: 50

### **z/OS-OS/390 Hot Topics Supplement (February 2001)**

Topic: "Follow the Yellow Brick Information Superhighway" (z/OS and OS/390 product information deliverables, wizards, LookAt, CD-ROMs, etc.)

Number of articles: 16

Total pages: 26

### **OS/390 Hot Topics (February 2001)**

Note: this edition is a part of GA22-7501-00

Number of articles: 6

Total pages: 9

All editions are orderable in hardcopy, available on the CD-ROM collections, on the internet, and on the zFavorites CD-ROM contained in this issue. The URL for Hot Topics on the internet is: [http://www.ibm.com/servers/s390/os390/bkserv/hot\\_topics.html](http://www.ibm.com/servers/s390/os390/bkserv/hot_topics.html).

However, if you want to Bookmark the above URL and not risk typing the URL incorrectly, try the above mentioned zFavorites CD-ROM. It contains this URL and many other zSeries URLs that you'll find useful.

## Hot Topics article index by topic

### **64-bit Architecture**

"64-bit real operation in z/OS,"

*OS/390 Hot Topics (February 2001)*, p. 6.

"64-bit real operation in OS/390 Release 10,"  
*z/OS Hot Topics (February 2001)*, p. 22.

### **ABTERMENC**

"Attention LE Run-Time Options,"

*OS/390 Hot Topics (February 2000)*, p. 20.

"Attention: LE Run-Time Options PR/SM,"  
*OS/390 Hot Topics (August 2000)*, p. 50.

### **Animations of product concepts**

"We're animated!,"

*z/OS-OS/390 Hot Topics Supplement (February 2001)*, p. 21.

### **BookManager**

"CD Collections to contain 'Try and Buy' for Build/NT,"  
*OS/390 Hot Topics (August 1999)*, p. 14.

"The bookworm's workhorse – IBM BookManager: the complete on-line documentation solution,"  
*z/OS-OS/390 Hot Topics Supplement (February 2001)*, p. 15.

"Easy on your eye – IBM SoftCopy Reader: the new Java-based viewer for softcopy,"  
*z/OS-OS/390 Hot Topics Supplement (February 2001)*, p. 17.

### **Books, ordering (see Ordering)**

### **Build/NT**

"CD Collections to contain 'Try and Buy' for Build/NT,"  
*OS/390 Hot Topics (August 1999)*, p. 14.

### **C/C++**

"Using XPLINK to improve C/C++ program performance,"  
*OS/390 Hot Topics (August 2000)*, p. 50.

"So, what gets XPLINK started? (LE, C/C++)," *OS/390 Hot Topics (August 2000)*, p. 51.

"Another (!) New Redbook!" (C/C++ Applications on OS/390 UNIX, SG24-5992), *OS/390 Hot Topics (February 2001)*, p. 7.

### **CDROM collections (see Softcopy)**

#### **Channel Subsystem Priority Queueing**

"Channel Subsystem Priority Queueing " (CSSPQ), *z/OS Hot Topics (February 2001)*, p. 11.

#### **CICS**

"CICS and CPSM" (dynamic workload balancing and resource management), *OS/390 Hot Topics (August 2000)*, p. 31.

### **Clusters (see Dynamic Workload Balancing)**

### **Collections (see Softcopy)**

### **CPSM (see Channel Subsystem Queueing)**

### **CSSPQ (see Channel Subsystem Priority Queueing)**

#### **DB2**

"Is OS/390 TCP/IP ready for DB2," *OS/390 Hot Topics (February 2000)*, p. 24.

"S/390 and DB2 Query Parallelism: Delivering peak parallelism performance (dynamic workload balancing and resource management)," *OS/390 Hot Topics (August 2000)*, p. 38.

#### **Dynamic Channel Path Management**

"Dynamic Channel Path Management," *z/OS Hot Topics (February 2001)*, p. 8.

#### **Dynamic Workload Balancing**

"Dynamic workload balancing: 'The magic inside the S/390 box'," *OS/390 Hot Topics (August 2000)*, p. 3.

"Life of a Transaction (dynamic workload balancing and resource management)," *OS/390 Hot Topics (August 2000)*, p. 6.

"PR/SM – Taking the myth out of logical partitioning (dynamic workload balancing and resource management)," *OS/390 Hot Topics (August 2000)*, p. 9.

"Get into goal mode! An overview of Workload Management," *OS/390 Hot Topics (August 2000)*, p. 11.

"Top ten benefits of Workload Manager in Goal Mode," *OS/390 Hot Topics (August 2000)*, p. 13.

"The goal mode experience," *OS/390 Hot Topics (August 2000)*, p. 14.

"Protecting your 'critical regions' when running goal mode," *OS/390 Hot Topics (August 2000)*, p. 17.

"Capacity Backup and Capacity Upgrade on Demand," *OS/390 Hot Topics (August 2000)*, p. 18.

"OS/390 I/O resource management," *OS/390 Hot Topics (August 2000)*, p. 21.

"Shark and I/O parallelism," *OS/390 Hot Topics (August 2000)*, p. 22.

"What are clusters? Why are all server platforms moving to support them," *OS/390 Hot Topics (August 2000)*, p. 24.

"A bit about batch," *OS/390 Hot Topics (August 2000)*, p. 28.

"CICS and CPSM," *OS/390 Hot Topics (August 2000)*, p. 31.

"IMS is plex-ible," *OS/390 Hot Topics (August 2000)*, p. 34.

"S/390 and DB2 Query Parallelism: Delivering peak parallelism performance," *OS/390 Hot Topics (August 2000)*, p. 38.

"Learning Services education: WLM and Parallel Sysplex," *OS/390 Hot Topics (August 2000)*, p. 46.

#### **Education**

"Need (OS/390) education?," *OS/390 Hot Topics (February 2000)*, p. 3.

"Learning Services education: WLM and Parallel Sysplex," *OS/390 Hot Topics (August 2000)*, p. 46.

"New courses!" (for zSeries), *z/OS Hot Topics (February 2001)*, p. 49.

### **Enhanced Custom Build Product Delivery Offering**

"OS/390 Enhanced Custom Build Product Delivery Offering, 5751-CS3, replaces 'stand alone' product media offerings," *Hot Topics (August 2000)*, p. 58.

### **Enterprise Extender (see TCP/IP)**

#### **EXCP**

"Exploiting z/Architecture with EXCP I/O," *z/OS Hot Topics (February 2001)*, p. 29.

### **Goal Mode (see Dynamic Workload Balancing)**

### **GRS Star (see Parallel Sysplex)**

#### **Hardcopy**

"Where have all the hardcopy collection books gone?," *OS/390 Hot Topics (August 2000)*, p. 56.

"Where did all the books go?" (z/OS), *z/OS-OS/390 Hot Topics Supplement (February 2001)*, p. 3.

"Hardcopy to go!" (printing hardcopy from z/OS CDs), *z/OS-OS/390 Hot Topics Supplement (February 2001)*, p. 9.

#### **Hot Topics**

"Do you have a hint or tip to share?," *OS/390 Hot Topics (August 1999)*, p. 15.

"Here's where you can find Hot Topics," *OS/390 Hot Topics (February 2000)*, p. 31.

#### **IMS**

"IMS is plex-ible (dynamic workload balancing and resource management)," *OS/390 Hot Topics (August 2000)*, p. 34.

### **Information Strategy (see Product Information)**

### **I/O Parallelism (see Dynamic Workload Balancing)**

### **I/O Resource Management (see Dynamic Workload Balancing)**

### **IP (see TCP/IP)**

#### **Intelligent Resource Director**

"Introducing the Intelligent Resource Director," *z/OS Hot Topics (February 2001)*, p. 4.

"LPAR CPU Management – Making a good thing even better," *z/OS Hot Topics (February 2001)*, p. 6.

"Dynamic Channel Path Management," *z/OS Hot Topics (February 2001)*, p. 8.

### **IRD (see Intelligent Resource Director)**

**ISPF**

"Has ISPF customization Got You Down,"  
*OS/390 Hot Topics (August 1999)*, p. 2.

**ISVs**

"ISVs and the IBM License Manager,"  
*z/OS Hot Topics (February 2001)*, p. 33

**Java**

"A New Redbook ('Experiences Moving A Java Application to OS/390'),"  
*OS/390 Hot Topics (August 2000)*, p. 54.

**Language Environment**

"LE Environment and migration,"  
*OS/390 Hot Topics (August 1999)*, p. 1.

"What is Language Environment?,"  
*OS/390 Hot Topics (August 1999)*, p. 4.

"Language Environment release history and FMIDs?,"  
*OS/390 Hot Topics (August 1999)*, p. 5.

"Six basic steps for migrating to Language Environment,"  
*OS/390 Hot Topics (August 1999)*, p. 6.

"Y2K and Language Environment,"  
*OS/390 Hot Topics (August 1999)*, p. 8.

"Migration Tips (for LE),"  
*OS/390 Hot Topics (August 1999)*, p. 9.

"Language Environment: LNKST or STEPLIB?,"  
*OS/390 Hot Topics (August 1999)*, p. 12.

"Language Environment run-time options,"  
*OS/390 Hot Topics (August 1999)*, p. 12.

"Attention LE Run-Time Options (ABTERMENC),"  
*OS/390 Hot Topics (February 2000)*, p. 20.

"Downward compatibility in Language Environment – Problem solved!,"  
*OS/390 Hot Topics (August 2000)*, p. 48.

"Using XPLINK to improve C/C++ program performance,"  
*OS/390 Hot Topics (August 2000)*, p. 50.

"Attention: LE Run-Time Options PR/SM (ABTERMENC),"  
*OS/390 Hot Topics (August 2000)*, p. 50.

"So, what gets XPLINK started? (LE, C/C++),"  
*OS/390 Hot Topics (August 2000)*, p. 51.

**LE (see Language Environment)****License Manager**

"Self-managing your software licenses and costs,"  
*z/OS Hot Topics (February 2001)*, p. 24.

"A piece of the action" (License Manager pricing models),  
*z/OS Hot Topics (February 2001)*, p. 26.

"License Manager standards,"  
*z/OS Hot Topics (February 2001)*, p. 27.

"Ramp up to IBM License Manager,"  
*z/OS Hot Topics (February 2001)*, p. 32.

"ISVs and the IBM License Manager,"  
*z/OS Hot Topics (February 2001)*, p. 33

**Linux**

"LINUX meets the enterprise servers,"  
*z/OS Hot Topics (February 2001)*, p. 15.

**LookAt**

"Set up your own OS/390 message database,"  
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## Security and intrusion detection

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system periodically looking for vulnerabilities or evidence of intrusion. Some scanners evaluate log data and can identify behavioral anomalies and patterns associated with intrusions.

In z/OS V1R2, the z/OS Communications Server adds support for integrated Intrusion Detection Services (IDS) which enable the detection of attacks against the TCP/IP system and the application of defensive mechanisms on the z/OS server. The focus of IDS is self-detection and self-protection. It is not intended to replace external network-based intrusion detection sensors but rather to complement them by broadening the set of detectable intrusions. The z/OS Communications Server IDS is integrated into the z/OS Communications Server TCP/IP system. By integrating this function in the server, which is the communications endpoint, the IDS can efficiently evaluate data that is unavailable to external intrusion detection systems. For example, data that has been encrypted end-to-end by IPSec can be examined in clear-text after decryption. The IDS also has access to internal information such as system resource usage, connection state information, and internal thresholds and counters.

IDS events detected include ICMP and TCP/UDP port scans, and a variety of single and multiple packet attacks. It incorporates a Traffic Regulation Manager function (TRM), which can conserve system resources during peaks of inbound requests from the network.

The IDS can record information relating to suspected intrusions. IDS event information can be recorded in syslog files and/or written to the console. IDS statistics can be recorded in syslog. Packet trace samples can be recorded to document suspicious activities. An IDS report program, TRMDSTAT, provides summary and detailed reporting of IDS events and statistics.

IDS messages can drive NetView message automation. Possible message automation actions include routing messages to a NetView console, notifying a system administrator via e-mail or pager, or running TRMDSTAT reports and attaching the reports to an e-mail to the system administrator. Sample NetView clists are available at [http://www.tivoli.com/support/downloads/netview\\_390/tools/idsauto.html](http://www.tivoli.com/support/downloads/netview_390/tools/idsauto.html).

For more information on the z/OS Communications Server Intrusion Detection Services, refer to chapter 13 of the *IP Configuration Guide*, SC31-8775-01 at: <http://www.ibm.com/servers/eserver/zseries/zos/bkserv/r2pdf/commsserv.html>.

As we said at the beginning of this article, there is much going on in the computer security area these days; Public Key Infrastructure and Intrusion Detection are two current hot topics. For a more complete discussion of security on z/OS, please refer to an article by the current authors and several colleagues. The article, "Security in z/OS: Comprehensive, current and flexible," was published in the IBM Systems journal, vol. 40, no. 3 and can be found at: <http://www.research.ibm.com/journal/>. ■



# Security and intrusion detection

BY R. GUSKI AND L. OVERBY

With our nation now involved in a new war, security is more than ever a matter of concern for Information Technology professionals. Although security on zSeries can touch upon many areas, two topics that are especially hot right now are Public Key Infrastructure and Intrusion Detection. Let's start our discussion with Public Key Infrastructure.

## Public Key Infrastructure

A Digital Certificate is an electronic document that binds the identity of a particular computer user or process to the so-called "public" key of a public key technology pair of two mathematically related encryption keys. The other key of the associated pair -- the "private" key -- is known only to the user or process that is associated with the identity. Because of the nature of the public key encryption algorithms, data encrypted with either one or the other of such a key pair, can only be decrypted with the other key of the pair.

Based on this principle, public key technology includes services that support the identification and authentication of users and processes at, for example, either or both ends of a TCP/IP communication socket, as well as the ability to exchange information privately across a public channel. Such services are already widely deployed across our industry, the most recognizable example being



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the Secured Sockets Layer (SSL) which most of us have used, probably unknowingly, when we have had the occasion to make a purchase over the Internet. Digital Certificates are central to the utilization of this technology, and as public key technology finds its way into more and more of our business applications, the need will grow for highly scaleable computer software systems to assist in their management.

Such systems are known collectively as Public Key Infrastructure (PKI) systems and they deal with the life cycle management issues associated with the creation, distribution, and management of Digital Certificates. With Release 3 of z/OS, IBM introduces PKI Services support that is imbedded within the optional Security Server feature. Included is a Web-based application that serves as the primary end user interface for the acquisition of Digital Certificates and the installation of them into browsers and other dependent applications.

From the perspective of the security administrator, z/OS PKI Services can be the primary tool for implementing "Certificate Authority" and associated "Registration Authority" functions. Such functions can efficiently empower the enterprise with large numbers of Digital Certificates that are securely associated with customers, employees, and business partners. You can find complete information on the use and implementation of this exciting new function in the new publication *IBM z/OS Security Server PKI Services* (SA22-7693-00).

## Integrated Intrusion Detection Services

Intrusion detection systems are used to detect potential intrusions and attacks on the network or a host in the network. Common intrusion detection types currently deployed are network sensors and vulnerability scanners. Sensors, placed at strategic points in the network (in front or behind a firewall, in the network, or in front of a host), operate in promiscuous mode, examining traffic real time that passes through on the local network. Most sensors use "pattern matching" to try to match a packet against a known attack which is expressed as an "attack signature." Scanners examine a

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